

ELSAG Plate Hunter® EOC User's Guide

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EOC User's Guide

1 General Information



1.1 About This Manual

This manual contains information about the Selex ES Inc. Enterprise Operations Center System. It covers the various parameters of the application including instructions for daily operation of the system. The intended audiences for this manual Include Selex ES Inc.'s customers' general operating personnel, system administrators, authorized Selex ES Inc. clients and business partners, and Software Product Evaluators. It is primarily focused on the tasks required for day-to-day operation of the system that are performed by non-administrative personnel.

1.2 Revision Information

If it becomes necessary to revise this user's guide, Selex ES Inc. will give the reasons for the revision in this section.

Version	Description	Revised Date	Revised By	Approved By
1.0	First release	June 2012	DC	CT, NW
1.1	Updated	July 2012	DC	CT, NW
1.2	Updated, added cross search, convoy search	September 2012	DC	CT, NW
2.0	Updated, TOC, cross search, convoy search	October 2012	MM	CT, NW
3.0	Updated for EOC 5.0 Release	August 2013	СТ	CT, NW
4.0	Updated for EOC 5.2 Release	February 2014	LR, CW	LR, SM
5.3	Updated for EOC 5.3 Release	July 2014	LR	LR, SM
5.4	Updated for EOC 5.4 Release	October 2015	LR	LR, SM
5.5	Updated for EOC 5.5 Release	December 2015	TV	TV, SM
5.6	Updated for EOC 5.6 Release	May 2016	GR	GR,LR.SM
5.6	Updated for EOC Suite 5.6 Parking	December 2016	GR	SM

Table A — Manual Revision Information (English Version)

1.3 Selex ES Terminology, Acronyms, and Terms

The following terms include acronyms that may appear throughout this and other Selex ES Inc. publications; however, they are terms with which a beginning user may not be familiar.

Term	Explanation/Definition/Description
Alarm	A read whose license plate number matches a List entry.
CarSystem	The vehicle or FCU PC application which allows operator interaction with reads, alarms and lists.
CSV	Comma-Separated Value
EOC	Enterprise Operation Center
EPH	ELSAG Plate Hunter®
FCU	Field Control Unit – Electronic cabinet connected to up to 4 LPR Fixed Cameras and, normally, a computer running the CarSystem application.
GPS	Geo Positioning System
GUI	Graphical User Interface (pronounced GOO-ee)
IIS	Internet Information Services
LAN	Local Area Network
List	Any collection of license plate numbers.
LPR	License Plate Reader or License Plate Reading
MDT	Mobile Data Terminal
MPH	Mobile Plate Hunter
MWP	SELEX ES Middleware
PC	Personal Computer
Read	The data packet associated with an LPR read event which Includes the license plate, GPS location, timestamp, JPEG black and white image of the plate and JPEG color overview of the vehicle.
Reader	Collection of cameras at the same location or in a mobile unit (car).
TOC	Tactical Operation Center
USB	Universal Serial Bus

1.4 Supported Web Browsers

The following web browsers are supported for accessing EOC features:

Microsoft¹ Windows² Internet Explorer³ 11, Edge, or latest versions of Mozilla Firefox⁴, Google Chrome⁵.

Browser	Versions
Microsoft Internet Explorer	11, Edge
Google Chrome	Latest
FireFox	Latest

Note: (IE 7, 8, 9, and 10 are no longer supported)

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¹ Microsoft® is a registered trademark of Microsoft Corporation.

² Windows® is a registered trademark of Microsoft Corporation.

³ Internet Explorer® and Edge are registered trademarks of Microsoft Corporation.

⁴ Firefox is a trademark of Mozilla Foundation.

⁵ Google Chrome is a trademark of Google.

2 System Overview



2.1 Introduction

The Enterprise Operations Center (EOC) manages a fleet of Elsag Plate Hunter® mobile LPR units and/or a network of Fixed LPR cameras. The EOC manages the distribution of the wanted plate database to the LPR units and uploads and archives both read and alarm data coming from them (an alarm is created when a license plate is read that matches a plate in the wanted plate database). The EOC software includes a Web site that allows remote access to data.

This document is intended for use by all users of the EOC regardless of their role. For information specifically about managing and administering the EOC, please see the *EOC Administrator's Guide*.

2.2 General System Architecture

Figure 1 below describes the general architecture of the EOC. This is a logical architecture. The architecture supports several physical implementations including every module in one server. High volume systems may require a higher number of servers to host the different software modules defined here.

The modules are:

- Metadata, such as plate numbers, timestamps, and GPS location are archived into the main SQL Server TRAN database. A SECURITY database stores the user's authentication and permission information. The STAGING database provides a buffer area for messages waiting to be inserted into the main TRAN database.
- A dedicated file system area is used to archive images from the LPR cameras. This can be a simple Drive on local disks or a SAN (Storage Area Network).
- The **Aggregator** is a software Service based on the proprietary LPRCore communication middleware. Its purpose is to manage communication, receive reads from and distribute Hotlists and other configuration information to the various CarSystems. It also distributes other data stored in the STAGING database to the Injector.
- The **Injector** is a software service based on the proprietary LPRCore communication middleware. Its purpose is to communicate with the Aggregator service and manage the data in the SECURITY and TRAN databases. The Injector is typically installed on the web server machine.
- The EOC is a Web site (that is, a **web app)** that runs on the Microsoft IIS web server.

In general, the users interact with the Web app, which retrieves and/or edits data in the TRAN or SECURITY database. Edits made to the data in these databases are then transmitted to the Aggregator by the Injector in near real time. The Aggregator receives those changes, integrates them into the STAGING database, and then distributes them to any remote systems that have subscribed to receive changes to that type of data.

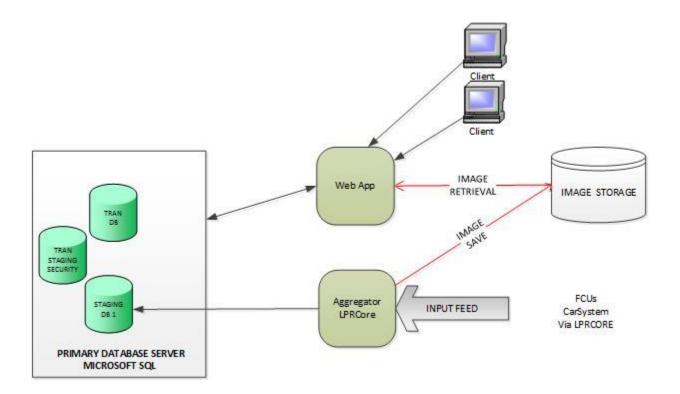


Figure 1 — General System Architecture

2.3 Accessing EOC Functionality

Once a user logs in, the main menu of the EOC will only display those EOC functions that the user has permissions to perform.

If you have full permissions to the system, you will see the following top-level menu shown in Figure 2 when you log in.



Figure 2 — EOC Main Menu

Below is a description of each selection on the EOC Menu and their uses.

NOTE: If your user has been configured to limit your access to certain system functions, you may not see all of the following menu selections.

2.3.1 Lists

The Lists Dropdown Menu is shown below in Figure 3.

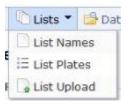


Figure 3 — Lists Drop Down Menu

2.3.1.1 **List Names**

 Creates, edits, deletes and views the structure and characteristics of lists (not the plate data itself).

2.3.1.2 List Plates

- Searches for a plate in one or more lists by plate number, state and/or alarm class
- Views the details of the plate entry in the list
- Changes some information about the entry
- Creates a list entry, and
- Deletes a plate entry.

2.3.1.3 List Upload

- Sets the parser file to be used to update incoming list data
- Shows sample format for parser file, and
- Uploads a list to refresh the data.

2.3.2 Data Mining

The Data Mining Dropdown Menu is shown below in Figure 4.



Figure 4 — Data Mining Dropdown Menu

2.3.2.1 Query Reads

- Views plate read information and details, including images.
- Creates data sets of plate reads using filters for date, time, plate number, state, location, source, status, alarm class and/or domain.
- Uses maps to display the geographic location of FCUs and plate reads, and
- Exports data sets to comma-separated value (CSV), PDF format, XML, or HTML files.

2.3.2.2 View Alarms

- Views alarm information and details, including images.
- Creates data sets of alarms using filters for date, time, plate number, make, model, state, location, source, status, alarm class and/or domain.
- Uses maps to display the geographic location of FCUs and alarms, and
- Exports data sets to comma-separated value (CSV), PDF format, XML, or HTML files.

2.3.2.3 Cross Search

- Cross search allows you to compare the results of multiple queries (up to five) to determine if
 plate reads are duplicated within a time range or across different time ranges, in the same
 location or in different locations.
- Determine if one or more vehicles was present at a specific location during a different time frame,
- Determine if the same vehicle or vehicles was present at different locations during different time frames.

2.3.2.4 Convoy Search

The Convoy Search feature allows you to identify plates that are seen together frequently.

2.3.3 User Configuration

The User Configuration Dropdown Menu is shown below in Figure 5.



Figure 5 — User Configuration Dropdown Menu

2.3.3.1 User Manager

 Creates, edits, deletes and views the characteristics of EOC users, filtering by user name, domain, email address, creation time and date, and whether the user is locked or enabled (Includes changing user passwords).

2.3.3.2 Group Manager

■ Creates, edits, deletes and views the characteristics of EOC groups for Feature and Domain privileges, filtering by group name, domain, description and session timeout.

2.3.3.3 My Profile

■ Sets up email notifications of alarms for accessible lists, failed system tasks and additional Email distribution lists.

2.3.3.4 Change Password (SQL Server Mode only)

Allows you to change your password when you wish to.

2.3.4 System

The System Dropdown Menu is shown below in Figure 6.



Figure 6 —System Dropdown Menu

Options you can use on the System Dropdown Menu are:

2.3.4.1 Log Messages

 Searches system log messages by date, time, Event type, Source, Description, Device, and Domain.

■ Display log message details

2.3.4.2 Audit Messages

- Searches user audit messages by date, time, Source, Description, User, Sevice, and Domain.
- Display audit message details.

Please see the *EOC Administrator's Guide* for more information about the other options on the System Dropdown Menu.

2.3.5 Monitoring Tools

The Monitoring Tools Dropdown Menu is shown below in Figure 7.

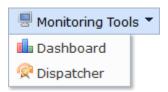


Figure 7 — Monitoring Tools Dropdown Menu

2.3.5.1 Dashboard

- Dashboard is a utility for system administrators and technicians that need to observe current performance details of the EOC system, and
- Totals, Reads, Alarms, Failed, List Status, GPS Status, Time Difference, Statistics Report, and Statistics Builder.

2.3.5.2 Dispatcher

■ The EOC Dispatcher feature allows users to view real-time alarms from mobile and fixed camera sites with the ability to mark each alarm record Correct or Incorrect, Edit the plate and / or state and add Officer Notes.

2.3.6 Help

The Help Dropdown Menu is shown in Figure 8.

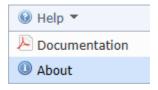


Figure 8 — Help Dropdown Menu

2.3.6.1 Documentation

Shows a page with links to the latest documentation.

2.3.6.2 About

Describes the EOC product.

2.3.7 Saved Searches (**)

Options for creating, organizing, and executing saved searches. In all cases, clicking the name of a saved search executes it.

2.3.7.1 Organize

Clicking the link navigates to the Saved Search Manager page.

2.3.7.2 Reads

■ Lists all saved searches that search license plate reads that are visible to you.

2.3.7.3 Alarms

■ Lists all saved searches that search alarms that are visible to you.

2.3.7.4 Cross Searches

Lists all saved Cross Searches that are visible to you.

2.3.7.5 Convoy Searches

Lists all saved Convoy Searches that are visible to you.

3 Authentication and Login



3.1 Introduction — Authentication and

Login

Once the Selex ES Inc. Enterprise Operations Center is installed, you'll need the following information to log in for the first time:

- The URL of the EOC System, and
- Your username and password.

You must obtain the above information from your organization's EOC administration team. The following section outlines important information you need to know about authenticating with the EOC.

3.2 Getting Started — Domains, Groups, and Users

The EOC manages data security using a system of Privileges, Domains, Groups, and Users. All data, including user accounts, are grouped together into domains. All users belong to at least one group. Each group has a set of privileges that members are granted within each domain. The data a user can see and the actions they can perform are thus determined by the domain to which the data belongs and the privileges that user has in that domain, as specified by their group memberships.

Privileges within a domain are cumulative. That is, if you belong to Group A and Group B, and Group A grants you privileges in Domain 1 that Group B does not, and Group B grants privileges in Domain 1 that Group A does not, you will have both sets of privileges.

3.3 EOC User Authentication Modes

The EOC system operates in one of two authentication modes: **SQL Server Mode** and **Active Directory Mode**. The mode in which your implementation of EOC operates is set up at installation time. Normal users cannot change the authentication mode in an installed EOC system.

In **SQL Server Mode**, an administrator creates and manage user authentication with the EOC user interface. The user information is stored in the EOC's SQL Server database. In essence, the EOC handles user authentication independently of the Microsoft Windows domain network.

Active Directory Mode uses the Microsoft Active Directory⁶, a service for Windows domain networks that serves as a central mechanism for network administration and security. In Active Directory mode, the EOC authenticates users using Active Directory, i.e., Windows domain user accounts. That is, the Windows system enforces authentication independently of the EOC.

Note that, although user authentication and management are performed through Windows, administrators will need to set up accounts within the EOC to map to those Windows user accounts. See *Logging in to the EOC — Active Directory Mode* on page 23 for details.

⁶ Active Directory® is a registered trademark of Microsoft Corporation.

3.3.1 Password Parameters and Requirements

If you are operating in SQL Server Mode, your user accounts will have the following restrictions:

- (1) Passwords must be a minimum of six characters in length, using any alphanumeric and/or special characters, and
- (2) Five (5) incorrect login attempts will lock a user out of the system, in which case the system administrator will have to re-enable the account.

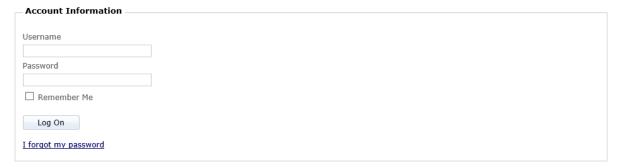
NOTE: The time window in which consecutive failed attempts are tracked is ten (10) minutes. Thus, if you try to log in four times and fail, then wait at least ten minutes, the system will see your next attempt as the first, not the fifth. Password parameters and requirement constraints can be modified using the **SQL Membership Provider** option described in the *EOC Administrator's Guide*.

If you are operating in Active Directory Mode, the only restrictions on passwords are those enforced by your Windows Active Directory system. There is nothing in the EOC that you can do to change them.

3.4 Logging in to the EOC — SQL Server Mode

To log into the EOC system, navigate to the URL of the Web site where the EOC resides using a supported web browser. Be sure to make a note of the EOC URL and add it to your Web browser's **Favorites** or **Bookmarks**. Referring to Figure 9, the screen you will see will be the Login Screen. To login follow the steps below.

Log On



EOC 5.6.20976 | culture en-US | uiCulture en-US | Request Server Time 12/15/2016 1:44 PM UTC-05:00

Figure 9 — Login Screen (SQL Server Mode)

- (1) Enter your Username and Password in the correct fields.
 - **NOTE:** If you are not a system administrator, your administrator will email you a login name and a temporary password when he or she sets up your user account. If you are a system administrator, you can log in for the first time using the default installed administrator account.
- (2) Optionally select the **Remember me** checkbox so that you will not need to reenter your username every time you log in.
- (3) If you have forgotten your password, press the "<u>I forgot my password</u>" link. The system will email a new password you can use to reset your password to the email address associated with the EOC user account.

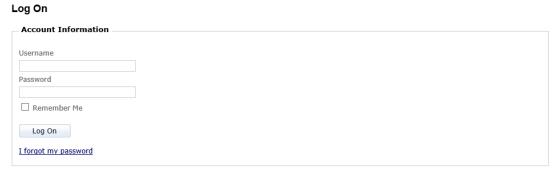
(4) Press the **Log On** button.

3.5 Logging in to the EOC — Active Directory Mode

Because authentication in Active Directory Mode is handled by Windows Active Directory, logging into the EOC in Active Directory Mode is slightly different from logging in to an EOC in SQL Server Mode. To log into the EOC system, navigate to the URL of the Web site where the EOC resides using a supported web browser. Be sure to make a note of the EOC URL and add it to your Web browser's **Favorites** or **Bookmarks**. Referring to Figure 10, the screen you will see will be the Login Screen. To login follow the steps below.

NOTE: You log into Active Directory Mode using your standard Windows username (in the form of *DOMAIN\username*) and the password.





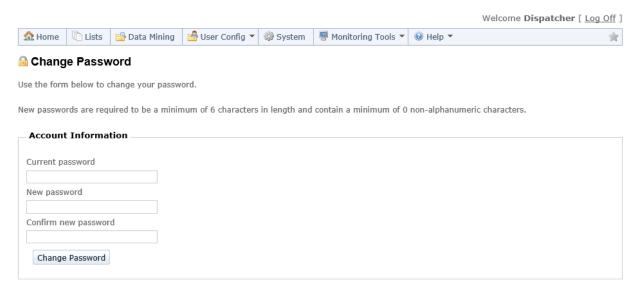
EOC 5.6.20976 | culture en-US | uiCulture en-US | Request Server Time 12/15/2016 1:44 PM UTC-05:00

- (1) Enter your Windows username and password in the correct fields.
- (2) Optionally select the **Remember me** checkbox so that you will not need to reenter your username every time you log in.
- (3) Press the Log On button.

NOTE: There is no <u>I forgot my password</u> link, since authentication and user management are handled through Windows and not through the EOC.

3.5.1 First Time User Change Password Procedure

The first time you log in while in SQL Server Mode, you will be prompted to change your password, as shown below in Figure 11.



EOC 5.6.20976 | culture en-US | uiCulture en-US | Request Server Time 12/15/2016 1:37 PM UTC-05:00

Figure 11 — Change Password Screen

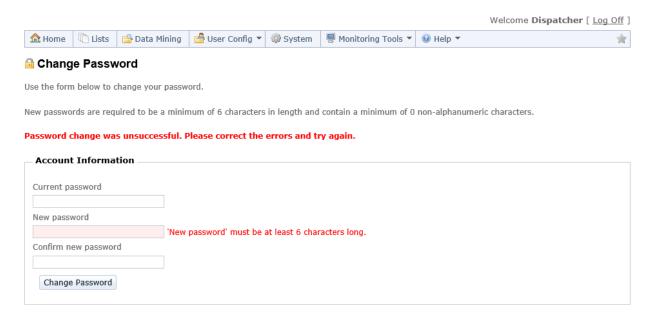
To change your password the first time you log in, perform the steps that follow:

- (1) Enter the password your system administrator sent you in the Current password text box.
- (2) Type the new password into the **New password** text box.
- (3) Type the new password into the **Confirm new password** text box.
- (4) Press the **Change Password** button and the screen shown in Figure 12 will appear if the change is successful.



Figure 12 — Change Password Success Message

(5) If your new password does not conform to the password requirement rules currently in force, an error will be displayed, as shown in Figure 13. Try again with a new password that does conform to your organization's rules.



EOC 5.6.20976 | culture en-US | uiCulture en-US | Request Server Time 12/15/2016 1:39 PM UTC-05:00

Figure 13 — Change Password Failed Message

NOTE: If you do not change your password, you will still be allowed access to the system, but you will be prompted to change the password every time you subsequently log in. It's better practice to change the password the first time you log in.

3.5.2 Change Your Own Password Procedure

If your EOC operates in SQL Server Authentication Mode, you can change your password any time you wish by clicking on **User Config > Change Password**, then follow these instructions:

- (1) Enter the password your system administrator sent you in the Current password text box.
- (2) Type the new password into the **New password** text box.
- (3) Type the new password into the **Confirm new password** text box.
- (4) Press the Change Password button and the screen shown in Figure 12 above will appear.
- (5) If your new password does not conform to the password requirement rules currently in force, an error will be displayed, as shown in Figure 13 above. Try again with a new password that does conform to your organization's rules.

NOTE: The **Change Password** option does not appear on the **User Config** menu in EOC implementations configured to use Active Directory authentication.



4 Data Mining

4.1 Query Reads

4.1.1 Introduction

Every time a vehicle passes into the view of an LPR camera, the vehicle's license plate is captured. The data about that license plate is stored in the CarSystem database as a *read*. The CarSystem then searches the wanted license plate database for any matches. Each match is stored in the CarSystem database as an *alarm*. If a specific license plate is present in multiple Hot Lists, one alarm will be generated for each List Plate Entry. The read and all alarms are then transmitted to the EOC system and inserted into the TRAN database. A search returns all reads and alarms that match the criteria you have specified.

Key to the utility of the EOC system is the ability to search the plate data collected by cameras as well as alarms and list data added to the system from various sources.

Beyond the basic search capabilities, EOC also allows you to:

- Save searches for reuse by you or other EOC users, and
- Show both local time and the UTC offset for a particular plate read.

4.1.2 Alarms, Plate Reads and Permissions

As with all data in the EOC system, your access to reads and alarms depends on the privileges you have. For a read to be returned in the results of a search, you must first have permission to view reads in the domain that the read belongs to. For alarms to be included in the results, you must be able to see the read and must also have permission to view the list from which the alarm was generated.

That is, if you search for a particular plate read that has alarms associated with it and you don't have permissions to view the list from which the alarm was raised, the search results displayed will only show the result as a read, not an alarm (since showing the alarm would reveal that the plate was in a list somewhere). An alarm will also not display if you have permission to see the list that raised the alarm but do not have permission to view the read.

4.1.3 Search Result Limits

When a search is performed, the EOC counts the number of reads that match the search criteria and retrieves a page's worth at a time (by default, a page is 50 reads; you can specify how many reads to retrieve for a page using the "Rows" drop down control). If the read(s) you are interested in are not in the first page, you can navigate to the next page of results and so on through the first 1,000 matches. If your search returns more than 1,000 matches, you must modify your search criteria to view any reads after the first 1,000.

In order to minimize how long searches take on systems with millions of reads, the EOC system stops counting when the number of matches reaches 100,000. In that case, it will display the number of matching rows as "100,000+ Total Reads"

In practice, you should start a search by specifying the broadest parameters necessary, then applying additional criteria to reduce the result set until you get one with a reasonable number of matching rows.

"Reasonable" is a subjective quantity, but a good rule of thumb might be to get the number of matches under 50.

4.1.4 Fast Querying

To perform a Fast Query, use the steps that follow.

(1) Referring to Figure 14, after you have logged in for the first time and changed your password, you will see this screen, which allows you to perform fast querying without going through the **Data Mining** menu. This can be useful in the case where you are only interested in searching for a plate or two in the EOC database and you do not have other EOC work to do.

NOTE: You can also reach this page at any time by selecting Home.



EOC 5.6.20976 | culture en-US | uiCulture en-US | Request Server Time 12/15/2016 1:41 PM UTC-05:00

Figure 14 — Fast Query/Home Screen

(2) Referring to Figure 15, enter a complete or partial license plate number in the Plate field. You can search a partial plate number by typing in a few characters of the plate you want to look up with wildcard characters for positions you are not sure of (see below). In this example, plate "GVC4695" is used. When you are finished typing in the Plate field, click Search.



EOC 5.6.20976 | culture en-US | uiCulture en-US | Request Server Time 12/15/2016 1:41 PM UTC-05:00

Figure 15 — Fast Query Character Search

(3) Referring to Figure 16, the EOC will then display all the results that match the **Plate** field, allowing you to select the one you want to examine more closely.

Reads/Alarms

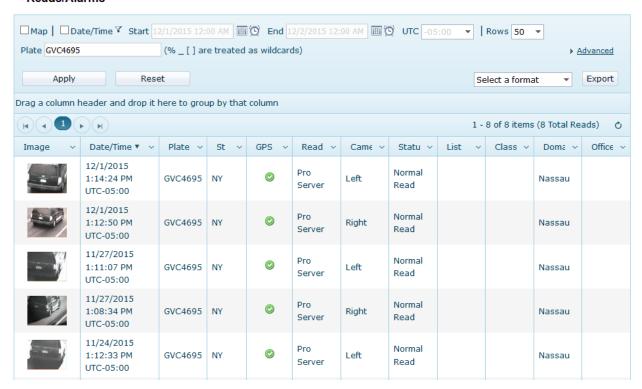


Figure 16 — Query Results Page

4.1.5 Reason for Action

If the **Reason for Action** application setting is turned on, performing a search for reads or alarms will cause the EOC to prompt you for the reason you are performing the search. The prompt is shown in Figure 17 below.



Figure 17 — Reason for Action Dialog

You must enter some text explaining why you are performing the search. You will not be able to click the **OK** button in the dialog until you have entered some text. The reason you enter may be reviewed at a later time or may become evidence in a trial, so make sure the text you enter complies with your organization's requirements. You can click **Cancel** at any time to abort the search.

After entering your reason for performing the search, click **OK** and the search will be performed. The text you entered is added to the system's audit messages log and can be retrieved using the **System > Audit Messages** command. See the *Audit Messages* section on page 120 for details on how to search the audit messages log.

4.1.6 Searching with Wildcards

You can also use wildcards to expand your search.

- % substitutes for any string of characters zero or more times in this position
- means a single character in this position
- means any one of the characters inside the brackets in the position

For example:

- ABC% finds all plates of any length starting with ABC
- %123 finds all plates of any length ending in 123
- A%3 finds all plates of any length starting with A and ending with 3

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 A__1234 finds all plates beginning with A, followed by any 2 characters, followed by 1234, and

A[B8]1234 finds only two plates (AB1234 and A81234).

4.1.7 Specifying Multiple Plates in a Search

Figure 18 below shows a close up of the **Plate** field, which is used to specify one or more plates of interest that the database will be searched for.

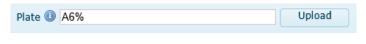


Figure 18 — Plate Field

Hovering your mouse over the symbol displays the tooltip shown in Figure 19.

- · A maximum of 100 comma delimited plates can be specified.
- Plates can be uploaded from a text file (one plate per line).
- % _ [] are treated as wildcards only on single plate searches.

Figure 19 — Plate Field Tooltip

As described in the tooltip, if you wish to search the database for all occurrences of two or more plates, the EOC provides three (3) different ways that you can specify the plates of interest:

- You may use the wildcard characters "%", "_", "["and "]". These characters can only be used if you specify a single plate. These are the same wildcard characters discussed on page 30.
- You may enter up to 100 plates (without any of the wildcard characters mentioned above) directly into the **Plate** field, each separated from the next by a comma. Any spaces you enter between plates are ignored; any spaces you enter within a plate are not ignored.
- You may enter up to 100 plates into a text file and upload them into the field using the **Upload** button. Each plate must be specified on a separate line and/or separated by commas. Blank lines and extra commas will be ignored. If the file contains more than 100 plates, the message shown in Figure 20 on the next page is displayed and the file will be rejected.

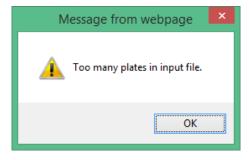


Figure 20 — Too Many Plates Error Message

Clicking on the **Upload** button displays a dialog that allows you to browse your computer's hard disk for the file with the list of plates that you wish to search for. The dialog displayed depends upon the operating

system installed on your computer. Once you have selected the desired file, its contents will be loaded into the **Plate** field as a comma separated list of plates.

4.1.8 Searching by Date Range

On this page as shown in Figure 21, you can now filter your results using the **Date/Time** filter. Check-off the **Date/Time** check box first and then enter the **Start Date** and **End Date** you are interested in checking. When finished, click **Apply** (the red arrows below point to the items in **bold text)**.

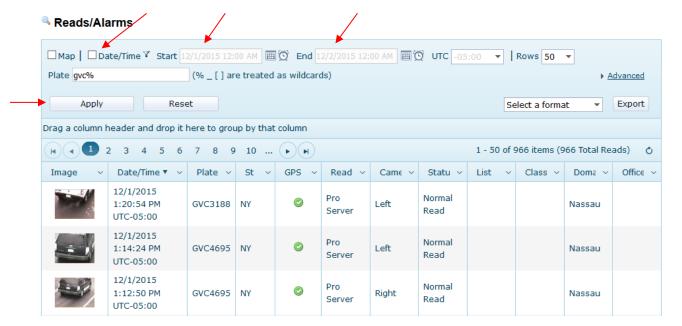


Figure 21 — Query Reads Parameters

To filter by the default 24-hour period, use the following steps:

(1) Referring to Figure 22, select the **Date/Time Filter** checkbox. (Notice that the date and time in the **Start** and **End** text boxes are no longer grayed out.) **Start** defaults to today at midnight, and **End** defaults to tomorrow at midnight.

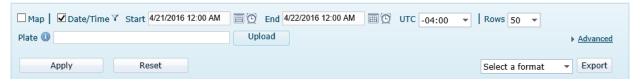


Figure 22 — Date/Time Filter Enabled for Default Period

(2) Press the Apply button.

NOTE: The set of reads displayed is narrowed to reads made during the 24-hour period. The default period begins at midnight today and ends at midnight tomorrow.

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To filter by any date and time interval, perform the following steps:

(1) Referring to Figure 23, select the **Date/Time Filter** checkbox. (Notice that the date and time in the **Start** and **End** text boxes are no longer grayed out.)



Figure 23 — Date/Time Filter Enabled

(2) Referring to Figure 24, use the small calendar and clock icons to set the Start and End of the date interval you want to search. You may alternatively enter the date and time you wish for the Start and End date interval using the keyboard.

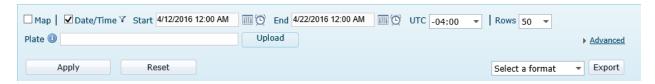


Figure 24 — Date/Time Filter Set to Non-Default Interval

(3) Press the **Apply** button. The set of reads displayed is narrowed to reads made during the specified date and time interval.

4.1.9 Searching on the Map

The EOC Includes a cartography function that allows you to search within one or more geographic locations and to display plate reads and/or alarms on a map to show where they occurred. This is useful management and reporting information that you can also export to other forms for later use.

4.1.9.1 Searching by Location

Referring to Figure 25, you use the options in the **Map Filter Tool** to focus on those data points that are within the section of the map you have visible. A map filter can be shaped as a circle or rectangle. The following sample screens demonstrate.

The first screen shows some of the data points you selected. Note that the list of reads below the map includes 11,241 items, though not all are visible.

Reads/Alarms

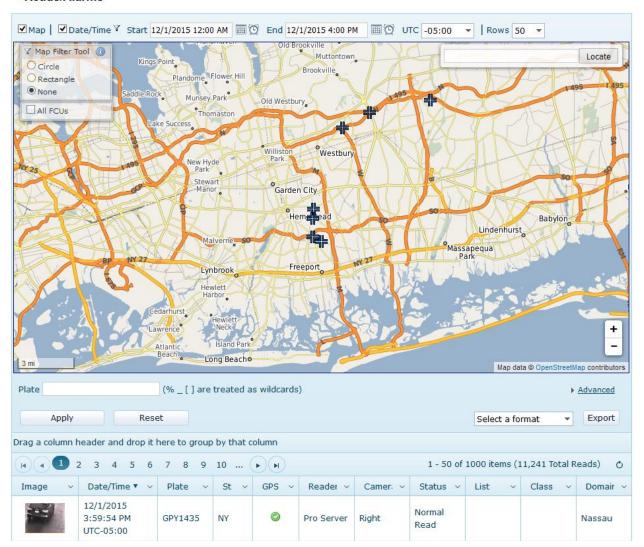


Figure 25 — Display Before Enabling Map Filter

Referring to Figure 26, select the **Map Filter Circle** or **Rectangle** radio button options. Position your mouse over the map where you want to create the filter. While holding the right mouse button down move the mouse to create the filter area on the map. Figure 26 shows a circular area that has been selected over a group of reads.

Reads/Alarms



Figure 26 — Map Filter Selected

Notes:

- You may select more than one area on the map of either circular or rectangular shape. Only reads that occurred within those the map areas covered by the shapes will be included in the results. There is no limit on the number of areas you may select at one time.
- You may choose to use either circles or rectangles to specify the areas of interest, but you cannot use circles and rectangles at the same time. Figure 27 shows a map that has two separate circular areas of interest selected.
- If you select an area in error, left click the mouse inside the erroneous area and a menu will pop up. Choose **Delete** on that menu to delete that shape.

Reads/Alarms

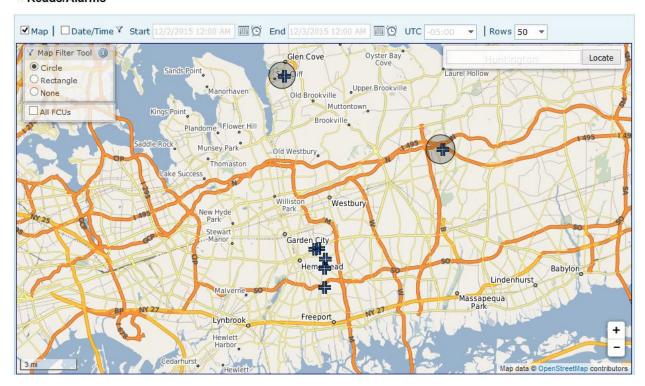


Figure 27 — Map with Multiple Areas Selected

Referring to Figure 28, once you have selected the area of the map to be filtered press the **Apply** button. The listing of plate reads below the map diminishes to include only the ones visible on the displayed part of the map.

NOTE: The list of matching reads has now diminished to the supporting details for only the reads shown on that map segment. In this example, the reads have been reduced from 11,241 to 1,061 reads.

Reads/Alarms

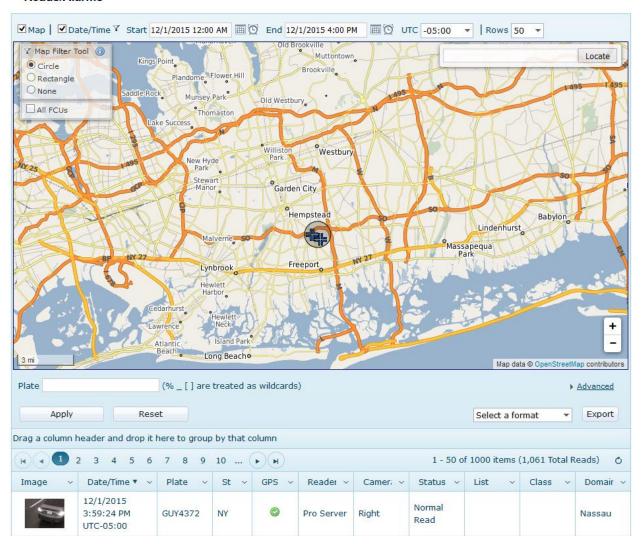


Figure 28 — Map Filter Applied Results

4.1.9.2 Mapping Results

Check the **Map Checkbox** to display the map. The map results will center on the average location of the pins on the page. If there are pins from a wide area, the map might center on an area where some of the pins are not visible. You can pan or zoom the map out to display the plotted pins.

Figure 29 — Initial Map Read Showing Data Points

As you can see, many of the selected points overlap and obscure each other on the map. The mapping user interface allows you to widen the display so that the points are discrete and more easily viewed. Use the +/- zoom buttons in the lower right hand corner of the display (see Figure 30) to zoom in or out on the display.



Figure 30 — Zoom In and Out Buttons

Referring to Figure 31, click the + sign to zoom in on the map, or increase the magnification. Clicking the - sign decreases the magnification. The map contains a scale indicator in the lower left corner that tells you the level of magnification currently being displayed. Note in the magnified map below that the data points are much easier to distinguish.

Reads/Alarms

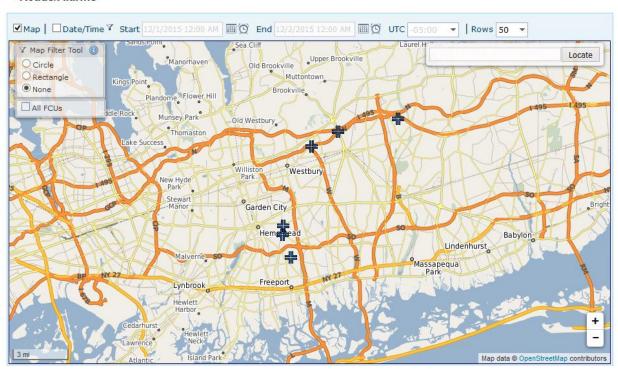


Figure 31 — Magnified Map

Referring to Figure 32, you can find out the address of a particular read by clicking on the point.

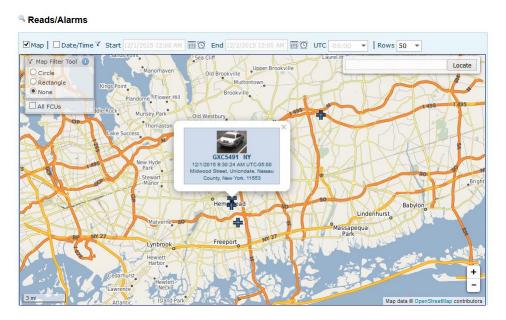


Figure 32 — Selected Area Address Highlighted

Type an address in the address box and click on **Locate** to center the map on that address.

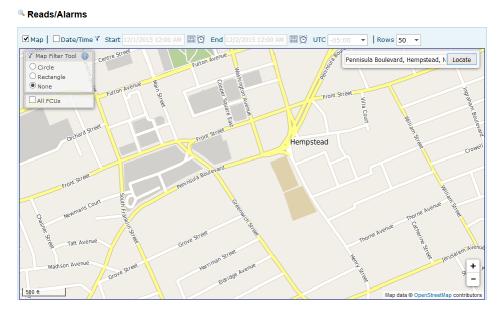


Figure 33 — Map Centered on Address

You can move the map display by clicking the left mouse button while the cursor is inside the map and dragging the map display in any direction. The mouse cursor changes into a small hand cursor while the map is being dragged. Release the mouse button when the map area of interest is displayed.

4.1.9.3 All FCUs Option

The **All FCUs** option plots on the map the locations of all fixed camera groups (FCUs) which have reads and which have coordinates specified in their site node on the Device Manager page (see the Elsag Plate Hunter® *EOC Administrator's Guide* for instructions on how to specify map coordinates for an FCU). If an FCU site node was just created and no reads have been generated by any of its cameras, that FCU will not be mapped. If the FCU has read plates but its coordinates are 0, 0, the FCU will not be mapped, either.

This option does not change the results of the search. It merely shows where the FCUs with reads in the database and with map coordinates are located on the map.

To use the feature, click the **All FCUs** checkbox to enable the option. Your display will appear similarly to that shown in Figure 34 below.

Reads/Alarms

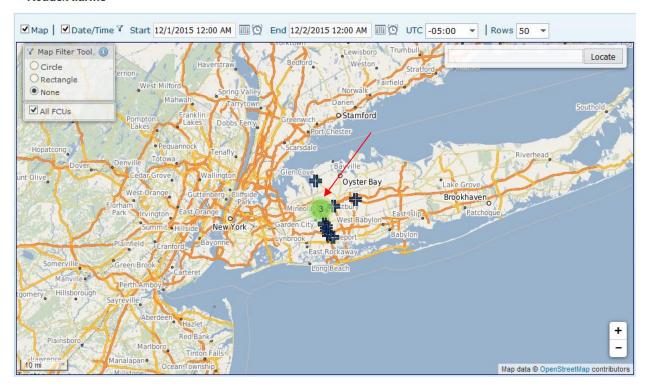


Figure 34 — All FCUs Map Filter Turned On

The green circle with the number 3 in it represents a cluster of 3 FCUs. Zooming the map in closer to a level where the FCUs can be mapped separately will replace the circle with individual camera icons, as shown in Figure 35 below.

Reads/Alarms

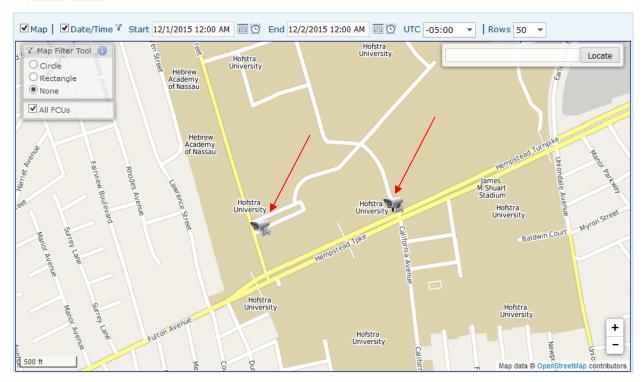


Figure 35 — FCU Map Icon

Hovering your mouse cursor over an FCU cluster will draw an area on the map that contains the FCUs. This helps you visualize how the FCUs are deployed relative to each other. Figure 36 is an example of how the map will display with the mouse hovering over an FCU cluster.

Reads/Alarms

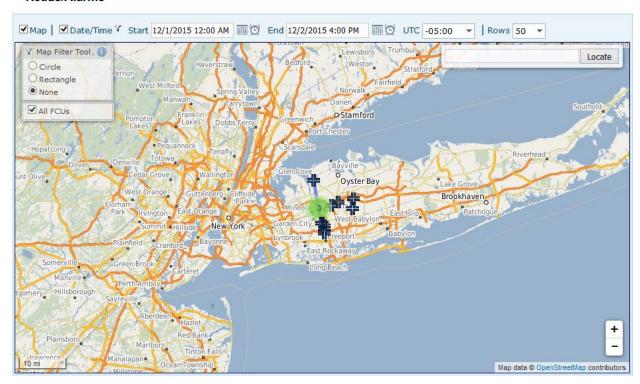


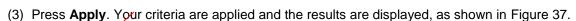
Figure 36 — FCU Cluster of 3

4.1.10 Advanced Query

To do more sophisticated searches, refer to Figure 37 and use the basic query functionality of EOC.

(1) To begin searching the data in the EOC database, select **Data Mining > Query Reads**. You'll see the first page of all reads in the database.

(2) Enter a plate number in the **Plate** field. You can use wildcards as in fast search to help aid your search. Refer to *Searching with Wildcards* on page 30 for details on how to use wildcards. In the figure, the string "gvc%" was entered in the Plate field to search for all plates that start with "GVC".



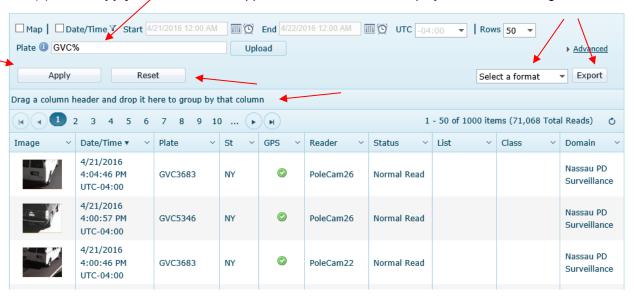


Figure 37 — Basic Query Results Screen

- (4) Clicking **Reset** sets the filter criteria to their default values.
- (5) Clicking **Export** exports the matching data to the file format you specify in the Format dropdown.
 - Setting the Format dropdown to **CSV** lets you export up to 1,000,000 reads in the search results to a csv file without images.
 - Setting the Format dropdown to HTML lets you export up to 10,000 reads in the search results to an HTML file with images.
 - Setting the format dropdown to PDF lets you export the current page of reads in the search results to a single PDF document that includes the read details and full size images, as shown in Figure 46 below.
 - Setting the format dropdown to XML lets you export up to 500 reads in the search results as XML without images.
- (6) You can filter the results as described in the *In-Column Filtering* section on page 57.

For columns that do not contain a **Filter** menu option in their column headings, you can still filter on these columns by expanding the **Advanced** options and specifying your filter criteria in the fields provided for them. Figure 38 below shows the fields for entering your criteria for these columns.



Figure 38 — Advanced Filtering Options

The various controls and their purposes are:

- **Readers Pane**: The top left pane contains a list of domains and readers, organized in a tree structure. You can use this pane to filter the results to a particular domain, reader, or camera, or any combination. See *Searching by Domain, Reader, or Camera* on page 46 for more details.
- Alarm Status Pane: The middle left pane contains a list of alarm statues. Checking an alarm status will include alarms with that alarm status in the results. The special status Normal Read is used to include or exclude reads without alarms from the result set.
- Lists Pane: The middle right pane is used to filter alarms by the Hot List that contained the plate.
- Alarm Classes Pane: The right pane is used to filter alarms in the search results by alarm class.
- * Make Field: Allows you to include in the search results only those reads that were for a vehicle that was manufactured by the company specified.
- * Model Field: Only those reads that were for a vehicle with the specified model name are included in the search results.
- * Color Field: Includes in the search results only those reads that were for a vehicle with the specified primary color(s).
- * Color 2 Field: Only those reads that were for a vehicle with the specified secondary color(s) are included in the search results
- * Vehicle Type Field: Allows you to include in the search results only those reads with the specified vehicle type(s).
- * Tax Class Field: Limits the search results to include only reads for those vehicles with the specified tax class.
- Notes Field: Allows you to specify criteria for matching text that appears in the Notes field.
- Officer Notes Field: Allows you to specify criteria for matching text that appears in the Officer Notes field.

* These fields are populated when license plate reads are matched against a Make/Model List, such as Motor Vehicle Department records. Contact Selex ES Inc. support for details on how to implement a Make/Model List.

4.1.11 Searching by Domain, Reader, or Camera

The Query Reads Advanced options **Reader Pane** can become a pop-out, floating, enlarged area that can be moved around the screen to facilitate the selection of which remote servers, cars, FCUs or cameras are to be queried when the list of active Readers has become long.

Referring to Figure 39, clicking on the Float option will pop-out the Readers Pane.

Reads/Alarms

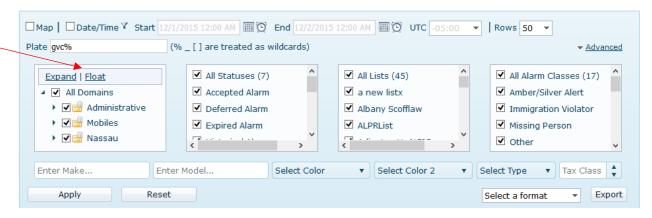


Figure 39 — Reader Pane Example

Once the Readers Pane has been floated, you can move the Readers Pane by clicking the left mouse button on the top of the Readers Pane window and dragging the window to the desired screen position. Clicking the Readers Pane Window "X" will return the Readers Pane back to the Advanced options pane.

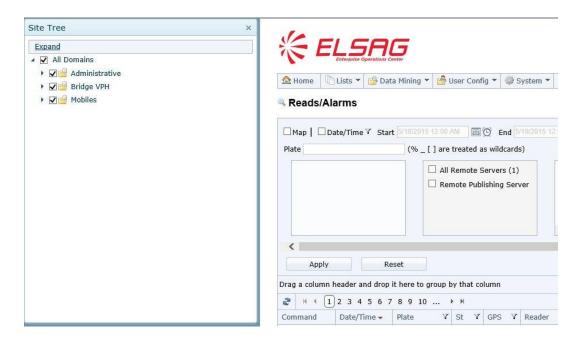


Figure 40 — Floating Readers Pane

Clicking the **Expand** link in the Readers Pane will cause all of the nodes in the tree to expand, showing all child branches and nodes. Figure 41 shows an expanded Site Tree.

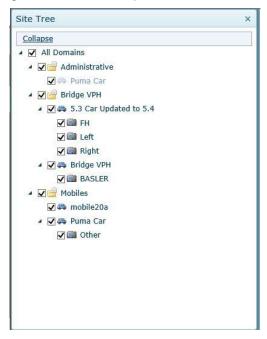


Figure 41 — Expanded Site Tree

The expanded Site Tree displays all Cars, FCUs and Cameras which have ever had a read, even if they have been deleted from the current configuration.

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Notes:

■ If a Device Manager node had reads and was subsequently moved to another domain or the node has been deleted, the node will appear grayed out. Referring to Figure 41, Puma Car under the Administrative Domain had reads but was moved to the Mobiles domain. This option allows you to search for plate reads that were recorded by the Puma Car before it was moved, as the data does not change domains when you move the site in the tree.

Clicking the "All Domains" check box to uncheck it will uncheck all nodes at once allowing singular or multiple selections of node criteria. Clicking it a second time then selects all nodes at once.

4.1.12 Querying Across Multiple EOC Implementations

You can query plate reads and alarms across multiple implementations of the EOC, if your system has been configured to connect to the servers of those EOCs. Your access to data on another EOC server will be controlled by your permissions on that server.

To make a query search multiple EOC databases, refer to Figure 42 and perform the following steps:

- (1) Select Data Mining > Query Reads.
- (2) Select **Advanced**. If your implementation is correctly configured and you have permissions, you'll see a list of the remote servers you can access in the **Readers Pane** on the left of the Advanced Options area (pointed to by the red arrow in Figure 42).

Reads/Alarms

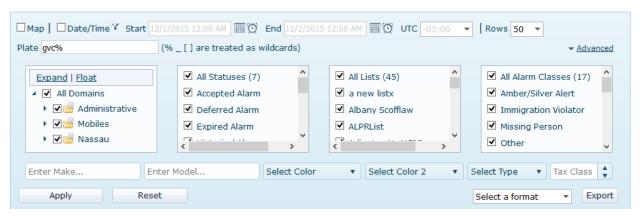


Figure 42 — EOC Remote Servers

(3) Select each remote EOC server you want to query by checking the box next to it in the **Readers Pane**. To query all remote servers, check the **All Remote Servers** box.

NOTE: Data from the local EOC server is represented by the named readers.

- To query data in the local EOC as well as data from remote EOC servers, leave some or all of the named reader boxes in the **Readers Pane** checked.
- If you only want to search the remote EOC servers, uncheck all the boxes in the Readers pane except the ones for the remote server(s) you are interested in querying.

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(4) Select Apply.

NOTE: You can refine your search in the same way as a local server search, by individual readers, statuses and/or alarm classes.

(5) Your results will include all plate reads and/or alarms found in all the servers you selected.

4.1.13 Searching Notes and Officer Notes

The **Notes** and **Officer Notes** fields allow you to specify criteria for matching their contents using special full text search syntax. Table B below describes the full text search syntax rules and how to use them.

To Match	Enter	Examples
A specific word	The word by itself.	Robbery assault
A specific phrase	Surround the phrase with double quotes (" and ").	"Aggravated Assault" "license plate"
Several specific words or phrases	The words or phrases to find, separated from each other by a space and/or the keyword "AND"	Times Square license AND plate
One of several specific words or phrases	The words or phrases to find, separated by the keyword "OR".	Main OR Maple license OR plate
A specific word or phrase but not another word or phrase	The words or phrases to find, separated by the keyword "NOT"	Smith NOT Jones license NOT plate
Words that start with a prefix	The prefix followed by an asterisk ("*")	Cam*

Table B — Full Text Search Syntax Rules

You can combine these expressions together, using the "AND", "OR" and "NOT keywords to separate conditions, and optionally using parentheses to group conditions together. For example, entering "((Main OR Maple) NOT Broad) Street" in the **Officer Notes** field will find all license plate reads whose Officer Notes properties contain "Main Street" or "Maple Street", but exclude all that contain "Broad Street".

You may enter an expression of the form "A NOT B", which will be interpreted as "A AND NOT B". That is, "A NOT B" will return the same results as "A AND NOT B". Additionally, the expression "A OR NOT B" is not considered a legal expression by the search engine, and will be interpreted as "A AND NOT B".

Note that the keywords "AND", "OR" and "NOT" are case insensitive. You may enter them using any combination of upper & lower case letters you wish. Searching for a specific word or phrase is also case insensitive; that is, searching for "main street" will match "Main Street", "MAIN STREET" and "main street".

Please note that the following words and symbols are all considered to be "noise" words by the full text engine and will never be found by a full text search:

\$, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z about, after, all, also, an, and, another, any, are, as, at, be, because, been, before, being, between, both, but, by, came, can, come, could, did, do, does, each, else, for, from, get, got, had, has, have, he, her, here, him, himself, his, how, if, in, into, is, it, its, just, like, make, many, me, might, more, most, much, must, my, never, no, now, of, on, only, or, other, our, out, over, re, said, same, see,

should, since, so, some, still, such, take, than, that, the, their, them, then, there, these, they, this, those, through, to, too, under, up, use, very, want, was, way, we, well, were, what, when, where, which, while, who, will, with, would, you, your

4.1.14 Searching by Make, Model, and Color

If your EOC includes a Make/Model List, you can search on Make, Model, Color, Registration Type, or Tax Class. Contact Selex ES Inc. support for details on how to implement a Make/Model List.

The **Make** and **Model** fields have an autocomplete feature. That is, if you type a letter, the field will automatically drop down a list of all entries that contain that letter, as shown in Figure 43 below.



Figure 43 — Make Field Auto Complete

You may also specify wildcard characters (%, _, [and]) in the text you enter into the **Make** or **Model** fields. This allows you to include reads in the results for makes or models that are spelled similarly but differ in some detail. For example, to include reads for vehicles that were manufactured by both "BERKELY" and "BERKLEY" in the search results, you could enter "BERK[EL][LE]Y" in the **Make** field. If you didn't use the wildcard characters, you could only get results for one spelling or the other.

To search for specific Colors, Registration Types, or Tax Classes, check only the boxes for those Colors, Registration Types, and Tax Classes you want to find

When you have selected the Make/Model information you wish to search for, click Apply.

4.1.15 Searching for Alarms

You search alarms in the EOC database using the same mechanisms that you use to search for plates.

Referring to Figure 44, to begin searching the alarms in the EOC database, select **Data Mining > View Alarms**. You will see the first page of all alarms in the database.

You can customize your alarm search by selecting a specific **Alarm Status**, **List**, or **Alarm Class** in addition to the .

Reads/Alarms □ Map | □ Date/Time ♥ Start 12/1/2015 12:00 AM ■ ② End 12/2/2015 12:00 AM ■ ② UTC -05:00 ▼ Rows 50 ▼ (% _ [] are treated as wildcards) ▼ Advanced ☐ All Statuses (7) ✓ All Lists (45) ✓ All Alarm Classes (17) Expand | Float ✓ Accepted Alarm ✓ a new listx ✓ Amber/Silver Alert ■ All Domains ▶ ☑ administrative ✓ Deferred Alarm ✓ Albany Scofflaw ✓ Immigration Violator ▶ ✓ 🖆 Mobiles ✓ ALPRList ✓ Expired Alarm ✓ Missing Person ▶ 🕶 🔒 Nassau ✓ Other ▼ Tax Class 🛊 Enter Make... Enter Model.. Select Color ▼ Select Color 2 ▼ Select Type Apply Reset Select a format Export Drag a column header and drop it here to group by that column N (4) 1 2 3 4 5 6 7 8 9 10 ... (►) (N 1 - 50 of 1000 items (1.450 Total Reads) 💍 Image Date/Time ▼ ∨ Plate St GPS Reader v Camer: v Status v List Class v Domair 12/1/2015 Suspend... Pendina NV DMV 2:45:38 PM GWB8367 Riaht Pro Server Nassau Alarm NCIC UTC-05:00 Revoked 12/1/2015 Suspend. Pending NY DMV 0 2:42:11 PM GCY1851 NY Pro Server Right Nassau Alarm NCIC UTC-05:00 Revoked 12/1/2015 Suspend. Pendina NY DMV 2:37:13 PM GGA1875 NY Nassau Alarm NCIC UTC-05:00 Revoked 12/1/2015 Suspend. NY DMV Pending FXE2347 1:16:42 PM NY Right Nassau Pro Server Alarm NCIC UTC-05:00 Revoked 12/1/2015 Suspend. Pending NY DMV 1:05:25 PM GEX7440 NY Pro Server Riaht Or Nassau Alarm NCIC UTC-05:00 Revoked

Figure 44 — Initial Alarms Screen

Notes:

- Alarm information is displayed in red. From here, you can perform all the same filtering and display operations on the alarm data as you did on the plate read data.
- The form displayed is identical to the one opened by the **Data Mining > Query Reads** option and works the same way. This option opens the form with the **Advanced** Options visible and the Normal Reads **Alarm Status** unchecked.
- The checkboxes in the Alarm Status, List, and Alarm Class

4.1.15.1 Alarm Statuses

When you are viewing alarms, you can sort or group them by the following statuses.

Pending Alarm — an alarm that awaits operator acceptance or rejection. If the CarSystem UI was not running on the CarSystem install where the alarm was generated and no Dispatcher operator takes action on the alarm, the alarm remains as a Pending Alarm forever. An example would be reads from an unmanned fixed camera.

■ Expired Alarm — only applied when using the CarSystem UI. Status is changed from Pending to Expired if an alarm is not acted upon by the CarSystem operator within 150 seconds (2.5 minutes).

- Accepted Alarm an alarm that has been acted upon by either a CarSystem or Dispatcher operator and deemed accurate.
- Rejected Alarm an alarm that has been rejected by an operator for one of a number of reasons, including a misread plate, no plate, obsolete List entry or wrong state.
- Deferred Alarm only applied when using the CarSystem UI. An alarm that was not displayed to the CarSystem operator because they either:
 - Opted to filter out alarms of that Alarm Class or
 - Deferred the plate for a period of 8 hours. Ex: An officer is aware of an alarm but may pass it
 multiple times during a shift, so he defers the alert so that the CarSystem Alarm Window
 does not pop up.
- Historical Alarm an alarm that is associated with an older read based on an updated list with an entry which has an effective date in the past. Historical alarms are only generated when the corresponding list entry is created. Modified list entries do not create historical alarms.
- Normal Read a read which is not associated with any alarms, as determined by the user's privileges. This option is unchecked by default when the page is displayed using the Data Mining > View Alarms option.

NOTE: Alarms are acted upon by CarSystem operators or EOC users who have permissions for Dispatcher or Alarm Validation Search Results. How to accept, reject or defer Alarms using the CarSystem UI is described in the *Elsag Plate Hunter® CarSystem User's Guide*. How to accept or reject alarms using Dispatcher is described in *Monitoring – Alarm Management* on page 98.

4.1.15.2 Alarm Classes

The following types of **Alarm Classes** are available for an alarm search:

- Amber/Silver Alert
- Immigration Violator
- Intel
- Missing Person
- Parking
- Protection Order
- Scofflaw
- Sexual Offender
- Stolen Out Of State
- Stolen Plate
- Stolen Vehicle
- Supervised Release
- Suspended or Revoked
- Tax Scofflaw

- Unknown
- Violent Gang
- Wanted Person
- While List Alarm, and
- Other.

4.1.15.3 Alarms and Permissions

As with all data in the EOC system, your access to alarms depends on the permissions you have with respect to the reads and lists from which those alarms are generated. If you search alarms for a particular plate read and you do not have permissions to the list from which the alarm came, you will not see any alarms for that read. Likewise, if you have permission to view a List in a domain, but do not have permission to view plate reads, you will not see any reads or alarms from that domain.

4.2 Search Results

After performing a search, you will see the search results window, as shown in Figure 45 below.

Reads/Alarms

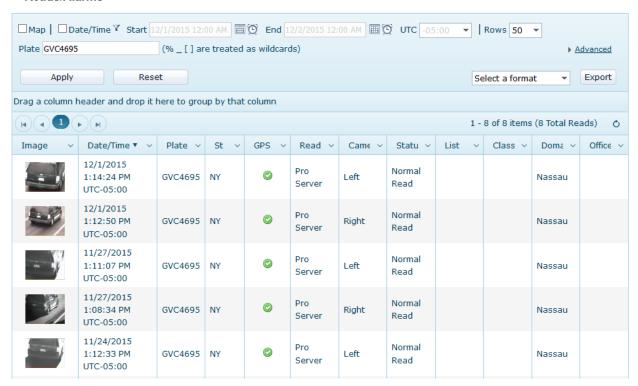


Figure 45 — Query Results Page

Referring to Figure 45, you can also view a specific read's details by clicking on the image located in the **Images** column. This will show you a read's information and enlarge the plate/vehicle image.

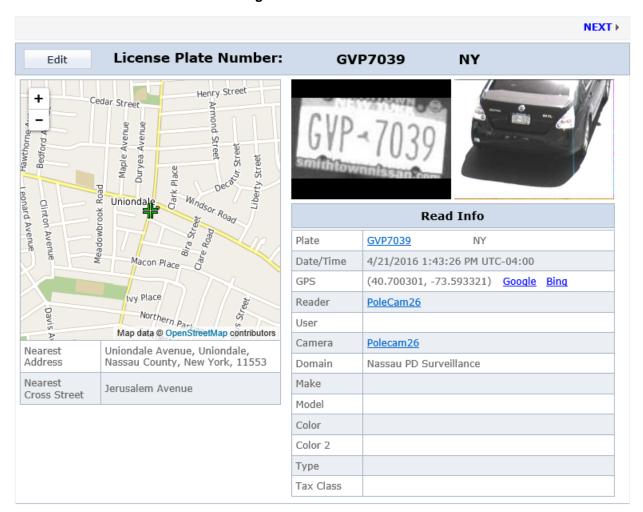


Figure 46 — Read Details



EOC 5.6.20688 | culture en-US | uiCulture en-US | Request Server Time 4/21/2016 1:43 PM UTC-04:00

Referring to Figure 46, the **Plate**, **Reader** and **Camera** fields are links. Clicking the Plate link opens a new window that performs a search for all instances of the Plate. Clicking the Reader or Camera link also opens a new window that performs a search for all reads generated by the Reader or Camera.

Referring to Figure 47, click on the full vehicle image and use the **Brighten** and **Sharpen** buttons to refine it. Use **Restore** to undo changes made by the **Brighten** and **Sharpen** buttons. Click on the X to close the expanded view.

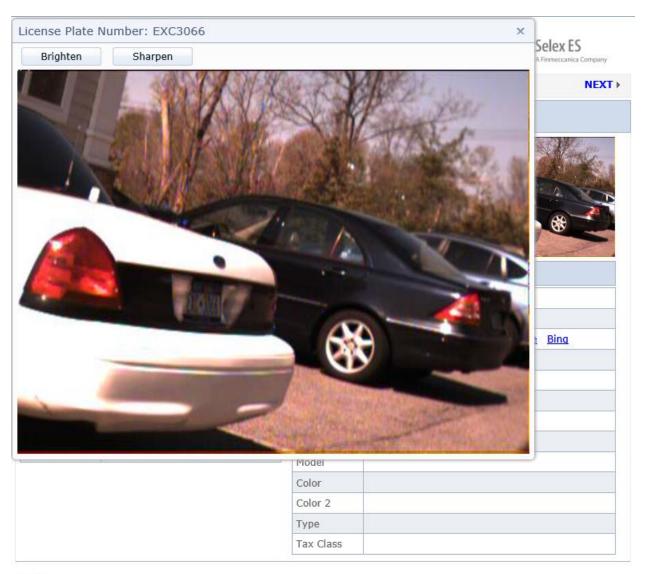




Figure 47 — Plate Read Color Image Close-up

Referring to Figure 48, click on the license plate image to see the full black and white license plate image.

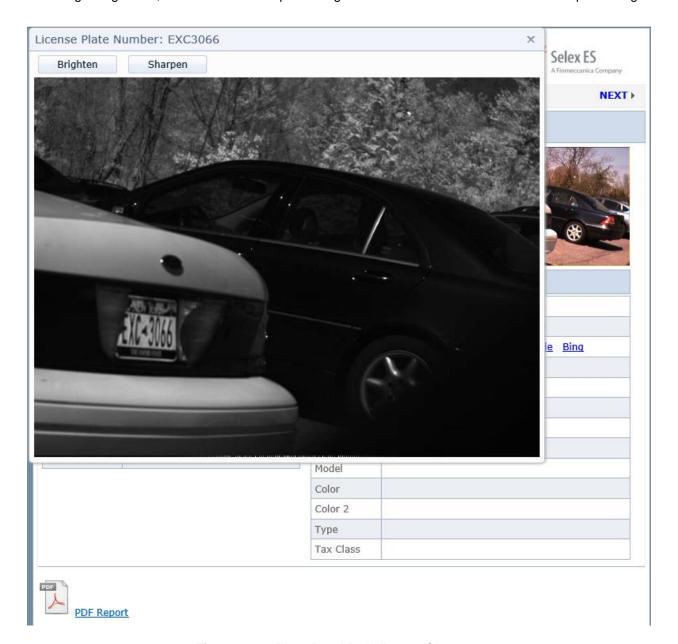


Figure 48 — Plate Read B&W Image Close-up

If you have more than one license plate read in your result set, you can page through the images and information using the Previous/Next arrows at the top of the Read Details window as shown Figure 49.

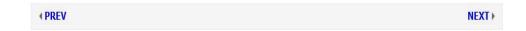


Figure 49 — Plate Read Navigation

You can also use the Left & Right arrow key keyboard shortcuts to navigate the reads in the data set.

Finally, in the lower left corner, there is a PDF icon that allows you to export the read's information in a PDF file. The PDF file contains the camera images for the read as well as the details. You can click the PDF icon to open the file and save it to a location outside the EOC.

4.2.1 In-Column Filtering

4.2.1.1 Filtering by Plate Number and State

A common search allows you to filter the plate data by plate number and state. This allows you to inspect the activity of a single plate or a small group of plates over a period of time. To filter the plate read data by plate number and state perform the following steps:

(1) Referring to Figure 50, press the dropdown arrow in the **Plate** column and choose **Filter**.

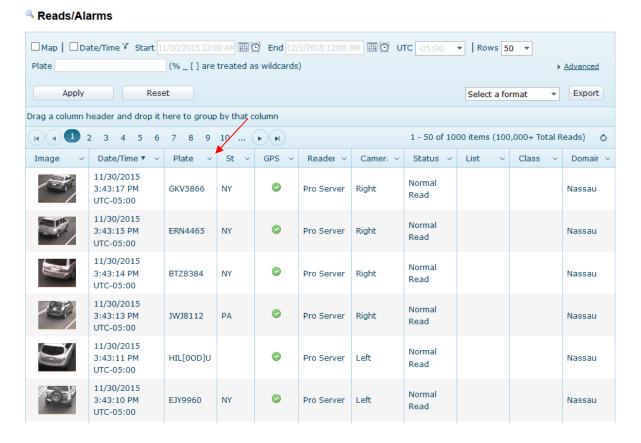


Figure 50 — Filtering by Plate

(2) The menu shown in Figure 51 will appear.



Figure 51 — Plate Column Menu

(3) Click on Filter. The dialog show in Figure 52 will display.

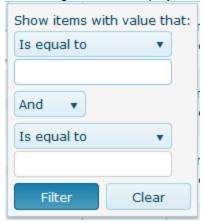


Figure 52 — Plate Search Filter

(4) Referring to Figure 53, use the dropdowns and textboxes to bind the search for plates that interest you. For example, the search below looks for plates that begin with the characters **GV** and ends with **36**.

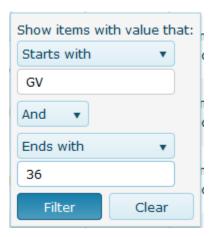


Figure 53 — Plate Search Filter Filled-in

(5) Press the **Filter** button at the bottom of the panel and the display will change to show only plates with the specified characteristics.

NOTE: You can undo a filter action by pressing the **Clear** button on the filter panel.

(6) Referring to Figure 54, now do the same thing in the **State** column to select a state.



Figure 54 — State Search Filter Filled-in

(7) Press the **Filter** button at the bottom of the panel and the display will change to show only plates with the previously specified characteristics that are also from **NY** State.

NOTE: You can undo a filter action by pressing the Clear button.

Clicking the dropdown next to the word "And" in the filter panel would allow you to filter for plates from either of two states. Just enter the second state abbreviation in the second field in the filter panel and click **Filter**. Note that entering a second state abbreviation and leaving that dropdown set to "AND" will return no results.

4.2.1.2 Filtering by Other Attributes

Columns whose drop down menu contains a **Filter** menu item can be filtered. The following columns allow you to filter based on their contents:

- Plate
- State
- GPS

When you filter by other attributes, the effect is additive. For example, filtering on *Is Equal to CT* in the **State** list and *Ends with 00* in the **Plate** list will give you a list of all Connecticut plates that end in 00.

4.2.2 Grouping Results by Column Header

You can group the display by a specific attribute of the reads by dragging the column header to the area indicated on the display. For example: to group the displayed reads by plate number. To change the column display, perform the following steps:

(1) Create the set of read data you need (see Figure 55).

Reads/Alarms □ Map | □ Date/Time ▼ Start 6/17/2015 12:00 AM ■⑤ End 6/18/2015 12:00 AM ■⑥ UTC -04:00 ▼ Rows 50 ▼ Plate ema% (% _ [] are treated as wildcards) ▶ Advanced Apply Reset Select a format Export Drag a column header and drop it here to group by that column 2 | H ← 1 2 → H Displaying items 1 - 50 of 71 (71 Total Reads) Command Date/Time ▼ Plate Y St Y GPS Y Reader Status Class Domain 7/17/2014 7:33:15 PM EMA4767 FI SAG-9 Normal Read Administrative NY UTC-04:00 6/12/2013 ELSAG-9 Normal Read Administrative 1:14:43 PM EMA8444 NY UTC-04:00 6/12/2013 1:07:10 PM EMA8786 NY 0 ELSAG-9 Normal Read Administrative UTC-04:00 6/1/2013 Putnam Detail 6:42:33 PM EMA9601 NY Normal Read Administrative Trailer UTC-04:00

Figure 55 — Read Data Set before Column Grouping

(2) Referring to Figure 56, drag the Plate column header to the specified area. Notice that the read data has been reorganized so it is grouped by plate number.

NOTE: To cancel the grouping click on the red "X."

Reads/Alarms

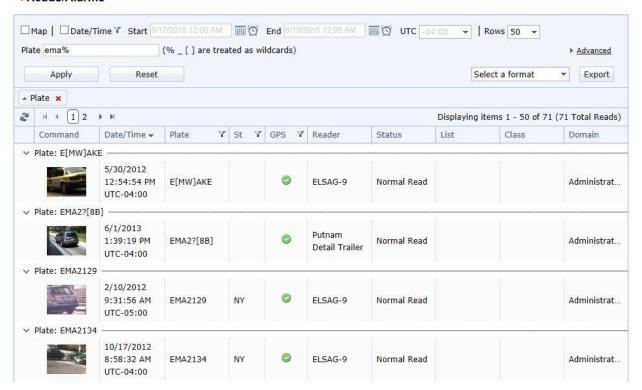


Figure 56 — Read Data Set after Column Grouping

Because the data filtering mechanism is substantially the same regardless of what you're filtering on, the sections below demonstrate only the most common procedures for filtering by date and time and by plate number and state. You can, however, use the filters on all attribute columns that provide the Filter menu option to structure complex queries. Use the general principles explained in the procedure below to filter on other attributes.

Note that filters are cumulative. For example, if you filter first by plate number, then by state, your final result set will contain only those plate numbers from the first search that also come from the state(s) you filtered by.

You can filter your search results by any attribute of the read. When you filter by multiple attributes, the effect is additive. For example, filtering on **State** is NY and *Ends with* **00** in the **Plate** filter will give you a list of all plates in NY that end in 00.

Columns whose drop down menu contains a **Filter** menu item can be filtered using the in-column filtering options described in Filtering by Plate Number and State on page 57. The following columns allow you to filter based on their contents:

■ Plate

- State
- GPS

4.2.3 Choosing Columns to Display

When you first navigate to the Data Mining page, the following columns are displayed by default:

- Image: Displays the color overview image for the read if one is available, otherwise, it will display the plate image.
- **Date/Time**: Displays the date and time at which the read was captured.
- Plate: The vehicle's license plate, as read by the LPR.
- State: The state in which the plate is registered, as detected by the LPR.
- GPS: Indicates whether good GPS coordinates are available for the read.
- Reader: The name of the Site that the LPR that captured the read is attached to.
- Camera: The friendly name of the LPR that captured the read.
- Status: If the read has an alarm associated with it, indicates the alarm's status
- **List**: If the read has an alarm associated with it, shows the name of the List that contained the entry that matched the vehicle's plate.
- Class: If the read has an alarm associated with it, shows the alarm class.
- **Domain**: The name of the domain that the read belongs to.

Next to each column name is a dropdown arrow, as shown in Figure 57 below.



Figure 57 — Default Columns

Clicking on the drop down arrow displays a menu with one or two choices (see Figure 51 on page 58 for an example):

■ **Columns** allows you to choose which columns to display, as shown in Figure 58 below. This choice is present on all columns

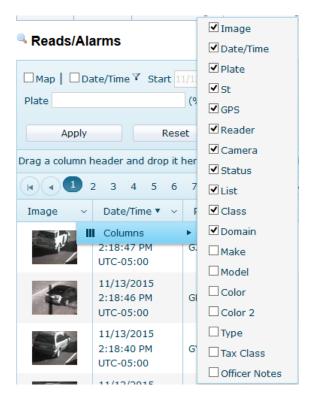


Figure 58 — Available Columns

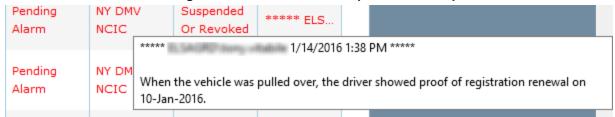
■ **Filter** allows you to specify filtering criteria for that column as discussed in the next section. This choice is only present on the **Plate**, **State**, and **GPS** columns.

To change the columns that are shown, click on the dropdown arrow, then choose **Columns**, then check off the columns you wish to display and uncheck any you do not wish to see. In addition to the columns displayed by default, the following columns can be displayed:

- Officer Notes: Displays any information added to the alarm by officers in the field or dispatchers. The column does not display the full contents of very long notes; how much of the Officer Notes is displayed depends on how many columns are currently displayed.
- *Make: The manufacturer of the vehicle
- *Model: The vehicle's model.
- ***Color**: The vehicle's primary color.
- *Color 2: The vehicle's secondary color.
- *Type: The vehicle's type (passenger, commercial, motorcycle, etc.)
- *Tax Class: A UK specific column.
- * These fields are populated when license plate reads are matched against a Make/Model List, such as Motor Vehicle Department records. Contact Selex ES Inc. support for details on how to implement a Make/Model List.

Depending on how many columns are displayed and the amount of text there is to display, all of a field's value may not fit in the space provided. In that case, the EOC will display as much text as will fit, followed by an ellipsis ("..."). Hovering your mouse over the text in that column displays more text. An example of this is shown in Figure 59 below.

Figure 59 — Column with Ellipsis and Tooltip



For most columns, the full value of the field will display in the tooltip, however, for a read with extremely long **Notes** or **Officer Notes**, the entire field's text may still not be displayed. In this case, you will have to open the read's details to see the full text. See step 0 on page 55 for instructions.

4.2.4 Reset Button

■ Use the **Reset** button to undo all the changes you have made to any data fields in the display.

4.3 Cross Search

Cross search allows you to compare the results of multiple queries (up to five) to determine if plate reads are duplicated within a time range or across different time ranges, in the same location or in different locations. Cross search is another way, like convoy search, that you can see patterns in the plate read data.

NOTE: Currently, Cross Search does not work with remote servers. Results returned from a remote server will not be displayed in a Cross Search. If this EOC is a subscriber for Copy Data, those results will be included in Cross Search results.

For example, you can use cross search to:

- Determine if one or more vehicles were present at a specific location during a different time frame, and
- Determine if the same vehicle or vehicles were present at different locations during different time frames.

Example of a **Cross Search**: A series of thefts have been occurring throughout neighboring cities. Using time frames specific to these incidents, **Cross Search** can be used to see if a certain vehicle or vehicles were present in both areas while the crimes took place.

To perform a Cross Search, perform the steps that follow:

Step 1

Step 2

Map Filter V Date/Time Filter V Start 11/30/2015 12:00 AM D End 12/11/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Start 11/30/2015 12:00 AM D UTC -05:00 V D Date/Time Filter V Date/Time Filter

(1) Select Data Mining > Cross Search. You will see the screen shown Figure 60.

Figure 60 — Cross Search Initial Screen

(% _ [] are treated as wildcards)

Plate

- (2) Referring to Figure 60, before specifying a plate you can select the search parameters pertinent to your search. These Include:
 - Map Filter Set the location on the map to search for a vehicle(s), and

 NOTE: The Map Filter is the entire region displayed in the map. If you need to narrow the geographic area, zoom in until the map shows only the area you wish to include.
 - **Date/Time Filter** Search for a vehicle(s) by choosing a specific time frame.
- (3) Press the blue plus sign (+) in the tab bar at the top to add another query to the cross search. To use **Cross Search** you must use a minimum of two queries.
- (4) Once you have a minimum of two queries you can search for the plate you are interested in by entering its characters in the **Plate** search, which can be found on the lower left hand side of the screen. If you don't have a plate, you can leave this field blank.
- (5) You can add additional queries (up to five total) as you did above. If you want to delete a query, click on the X (queries you made after that one will move to the left). For example, if you wanted

to see if the plate you searched for above was also at another location, create a new pane and search with a different location.

(6) Referring to Figure 61, you can also check the **Show results map** checkbox (and press **Apply**) to display the search results on the map and use the usual map manipulation tools (zoom, etc.) to make the display meaningful.

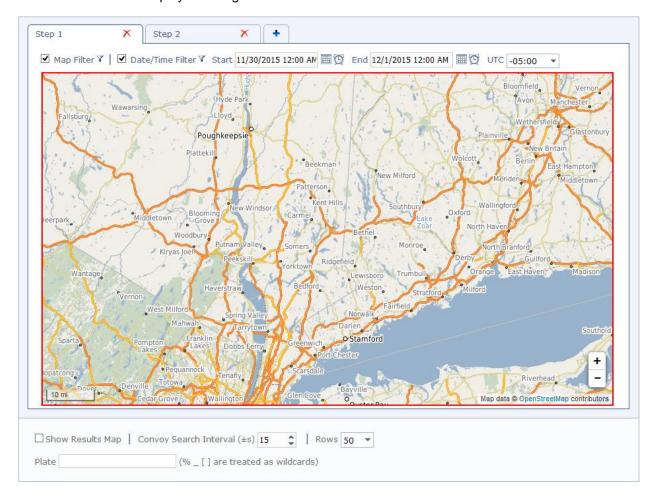


Figure 61 — Cross Search Additional Query

NOTE: When you have finished a cross search, you can reproduce the same results at any time. Save the criteria you've entered using the Saved Search feature so that you can run the same report at a later time. See *Saved Searches* on page 72 for more information about the Saved Search feature.

The **All FCUs** check box on the Cross Search screen works the same as the **All FCUs** check box on the **Data Mining > Query Reads** page when the **Map** checkbox is checked off. For more information on how to use this feature, please see the All FCUs Option section on page 41.

4.4 Convoy Search

The Convoy Search feature allows you to identify plates that are seen together frequently.

NOTE: Currently, Convoy Search does not work with remote servers. If a result is returned from a remote server, no Convoy icon will be displayed. If this EOC is a subscriber for Copy Data, those results will be included in Convoy Search results.

Examples of a Convoy Search are as follows:

- Smugglers have spread their cargo throughout multiple vehicles in a traveling caravan to lower the risk of losing their supply in its entirety. If one of the vehicles is stopped along the way, the others would still be able to pass through undetected. Convoy Search can be used to detect one such caravan of vehicles.
- An officer is concerned about vehicles that may be following them. By using Convoy search, it can be seen if a vehicle has been traveling in the same locations that they have been.

To perform a convoy search perform the following steps:

(1) Select Data Mining > Convoy Search. The Convoy Search screen shown in Figure 62 displays.

Reads/Alarms/Convoy Search

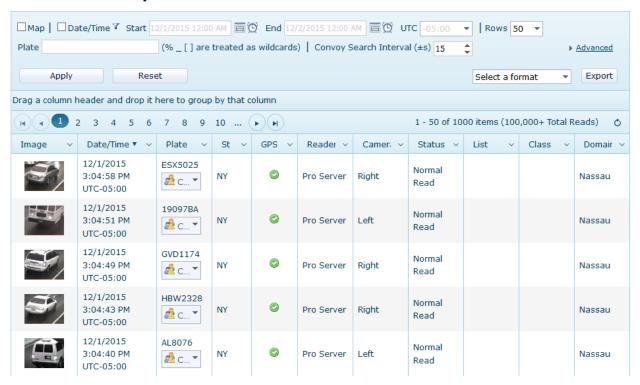


Figure 62 — Convoy Search Initial Screen

(2) Perform a normal search for the primary plate you are interested in, using the standard search parameters.

Reads/Alarms/Convoy Search

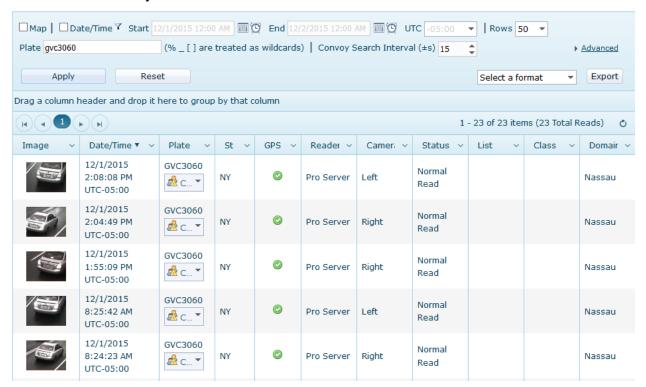


Figure 63 — Convoy Search Parameters

(3) Click **Apply**. The results will be displayed similarly to those shown in Figure 64.

Reads/Alarms/Convoy Search

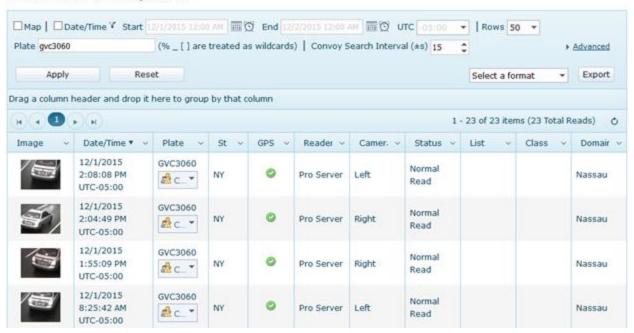


Figure 64 — Convoy Search Initial Results

- (4) Press the **Convoy** dropdown found under the plate field.
- (5) You will see a list of all the convoy plates read by the same FCU that are within the specified interval along with a number. The number reports the number of pairs of target plate and convoy plate, like that shown in Figure 65. The minimum value for the number is 2.

Reads/Alarms/Convoy Search

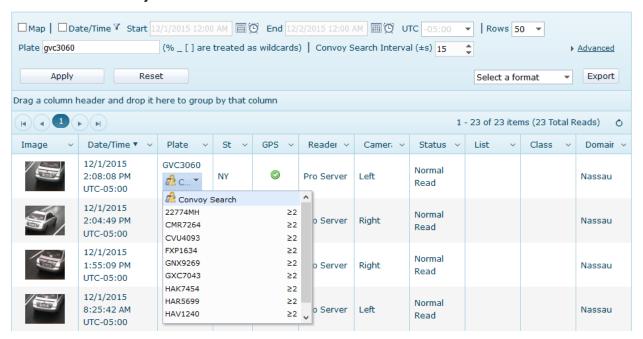


Figure 65 — Convoy Results List

The interval is configurable from a minimum of one second to a maximum of 86,400 seconds (24 hours). The default interval is 15 seconds before and after the primary read. You can manually change the interval by changing the value in the Convoy Search Interval numeric text box. Remember to click Apply when finished so your changes can take effect.

(6) Select a plate number from the results list to pop up a new window with the pairs of reads and their associated images like that shown in Figure 66. Click in either image to see the details of both reads.



Figure 66 — Convoy Pairs Sample Display

NOTE: Each window displays two records, the primary and the secondary, in order of the time they were recorded.

When you have finished a convoy search, you can reproduce the same results at any time. Save the final results page URL as a Favorite or Bookmark so that you can run the same report by clicking on the Favorite.

4.5 Saved Searches

The symbol in the right corner of the main menu allows you to save the current search criteria for later reuse or sharing, and to retrieve the saved search criteria and repeat the search. Figure 67 below depicts the Saved Searches Menu with some saved searches defined.



Figure 67 — Saved Searches Menu

The Saved Searches Menu consists of the following parts:

- The **Organize** link, which takes you to the Saved Searches page.
- The Name field, where you can enter a name for the current search criteria to save them as a new saved search.
- The Domain field, which allows you to keep the saved search private or to make it shared.
- The Delete and Save buttons.
- A collapsible list of Saved Searches visible to you for each of the Data Mining menu options: Reads, Alarms, Convoy Searches, and Cross Searches.

4.5.1 Saving the Current Search Criteria

Follow these steps to save the current search criteria for later reuse and/or sharing.

- (1) Click on the symbol in the right corner of the main menu.
- (2) Enter a name for the saved search in the **Name** field.
- (3) To keep the saved search private (i.e., to keep anyone else from being able to see and use it), leave the **Domain** set to "None (Private)".
- (4) To share the saved search with other EOC users, select a domain other than "None (Private)" from the dropdown list. Only those domains in which you have rights to modify saved searches will be listed.

(5) Click the Save button.

After clicking **Save**, The new Saved Search will appear in the collapsible list for the type of search you have saved (Reads, Alarms, Convoys, or Cross Searches).

4.5.2 Replaying a Saved Search

To replay a saved search, whether it is one that was created by you or someone else, follow these steps:

- (1) Click on the symbol in the right corner of the main menu.
- (2) Expand the category that the saved search you wish to replay belongs to, if it is not already expanded.
- (3) Click on the name of the saved search.
- (4) The search criteria fields are set to the saved values and the search is performed. You will also note that the symbol now changes color:

4.5.3 Editing a Saved Search's Name and/or Domain

If you wish to edit a saved search's name or domain, please follow these steps:

- (1) Follow the instructions in *Replaying a Saved Search* above to display the saved search you wish to edit.
- (2) Click on the graymbol to drop down the Saved Searches Menu.
- (3) To change the saved search's name, enter a new name in the Name field
- (4) To change the domain that the saved search is in (and thus change its visibility to other users), select a new domain from the **Domain** dropdown list.
- (5) When you are done making changes, click the **Save** button.

4.5.4 Deleting a Saved Search

There are two ways to delete a Saved Search:

- From the Saved Search Menu
- From the Saved Search Page (reached by clicking the Organize link in the Saved Search Menu).

Perform these steps if you wish to delete a Saved Search from the Saved Search Menu.

- (1) Follow the instructions in *Replaying a Saved Search* above to display the saved search you wish to delete.
- (2) Click on the 🚖 symbol to drop down the Saved Searches Menu.
- (3) Click on the **Delete** button.
- (4) The saved search is deleted and the * symbol changes back to the * symbol.

See Organizing Saved Searches below for instructions on how to delete a Saved Search from the Saved Searches Page.

4.5.5 Editing a Saved Search's Search Criteria

If you wish to change the search criteria belonging to the saved search, you will have to:

(1) Follow the instructions in *Deleting a Saved Search* above. Remember, this procedure applies the saved search's criteria to the page before you delete it.

- (2) Make whatever changes to the search criteria you desire and apply them to make sure the results are correct.
- (3) When you are ready, save the search criteria following the instructions in *Saving the Current Search Criteria* above.

NOTE: It is not possible to actually change the criteria of a Saved Search. You can only delete the Saved Search and create a new one.

4.5.6 Creating a New Saved Search from an Existing One

You can use this procedure to create a new Saved Search that differs slightly from an existing one. Instead of deleting the Saved Search:

- (1) Follow the instructions in *Replaying a Saved Search* above to display the saved search you wish to duplicate.
- (2) Change whatever criteria you would like to be different.
- (3) Save the current search criteria as a new Saved Search.

4.5.7 Organizing Saved Searches

The **Organize** link on the Saved Searches Menu brings you to the Saved Searches Page shown in Figure 68 below. Use this page to view all the saved searches visible to you and optionally edit their names or domains or delete them.

* Saved Searches



Figure 68 — Saved Searches Page

Note that you can sort and/or group the saved searches on this page by **Name**, **Domain**, or **Search Type**. By default, the page displays 50 saved searches at a time. You can navigate to subsequent pages if there are more than 50 saved searches, or you can choose to display 10, 25, 50, 75 or 100 saved searches per page using the **Items per page** dropdown at the bottom of the grid.

4.5.7.1 Editing a Saved Search from the Saved Searches Page

To change a Saved Search's name or domain from this page:

(1) Click on the **Edit** button. The **Edit** button changes in to an **Update** button and the **Delete** button changes to the **Cancel** button. The saved search's **Name** and **Domain** whose **Edit** button you pressed become editable, as shown in Figure 69 below

* Saved Searches

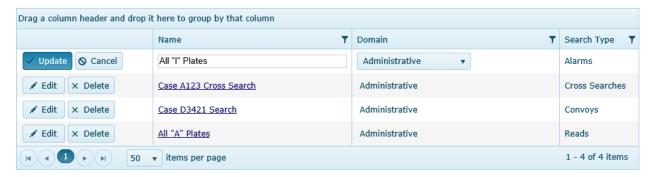


Figure 69 — Editing a Saved Search

- (2) Edit the name or change the Domain of the saved search as desired.
- (3) Click Update to save your changes, or click Cancel to discard all changes you've made.

Please note that you cannot change the saved search's criteria from this page. You must follow the directions in *Editing a Saved Search's Search Criteria* above if you wish to do so.

4.5.7.2 Deleting a Saved Search from the Saved Searches Page

To delete a Saved Search from this page:

- (1) Click on the **x Delete** button to the left of the name of the Saved Search you wish to delete.
- (2) The Saved Search is deleted.



5.1 Introduction

The EOC allows you to manage lists, which are collections of license plates of interest. You can manage the lists and their attributes and upload existing list data through the EOC. Script files (XML) parse the incoming data into the correct format for the EOC database.

Use the List Names and List Plates selections to search, view, and edit the data in the lists themselves.

5.2 List Names

The List Names functionality allows you to create, edit, delete and view list characteristics.

5.2.1 Creating a List

Referring to Figure 70, to create a new list,

(1) Select **Lists > List Names** from the menu at the top of the page. You will see a display of the lists in the system.

NOTE: You will only see lists you have access to see (there is nothing grayed out).

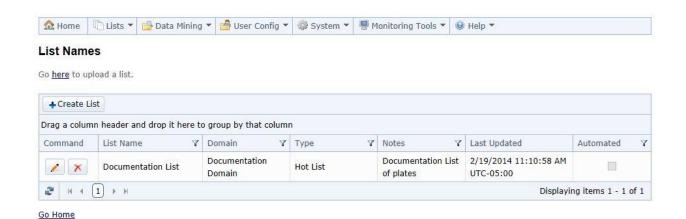


Figure 70 — List Initial Screen

(2) Press the + Create List button and the screen shown in Figure 71 will appear.



Figure 71 — Create List Screen

- (3) Fill in the following information about the list:
 - List Name Type in the name of the list.
 - **Domain** Select the EOC domain in which you want to create this list. You will only see domains to which you have access, and
 - Type The type of list:
 - Hot List
 - White List

NOTE: A White List is a list of authorized plates for a location such as a parking lot with authorized parkers. Alarms will sound on plates that are NOT in the White List.

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- Notes Type in any notes about the list that are pertinent
- Plates to exclude in uploads and automated imports (enter plates one per line)
- Only hit on Reads from this List's Domain checkbox. This option MUST be selected if the List is a White List and is only for use with White Lists.
- Script File Press Select to choose the XML file that defines where to find the incoming data file or source for the automated list import. You will get a Windows selection menu that lets you navigate to the appropriate script file.
- (4) If you specify a Script File for the list, the additional fields shown in Figure 72 will be displayed.

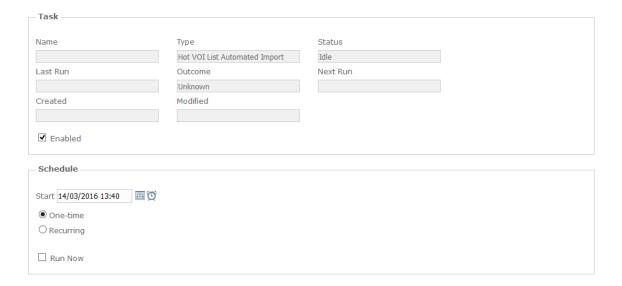


Figure 72 — Hot List Upload Schedule Parameters

(5) You may accept the defaults and import the data for the list once, or you may change the task to a recurring one, in which case the fields shown in Figure 73 will be displayed. The options allow you to update the Hot List on a recurring schedule.

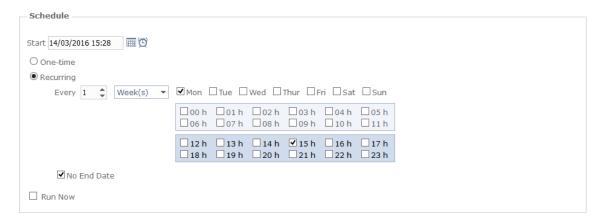


Figure 73 — Recurring Task Schedule Parameters

- (6) The **Recurring** options allow you to schedule the import to occur on a daily, weekly, or monthly basis. The weekly scheduling option allows you the greatest flexibility in deciding how often the Hot List will be updated.
- (7) By default, the **Recurring** choice is selected. If you only want to import the list once, just select the **One-time** choice. The display will appear as shown in Figure 74.

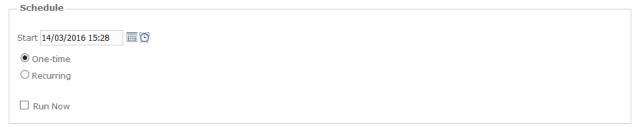


Figure 74 — One-time Scheduling Parameters

- (8) Check off **Run Now** if you wish the Hot List to be imported immediately.
- (9) Click Back to List if you decide not to save any of the information you have entered.
- (10) Press Create to create the Hot List.
- (11) If you specified a script file for the Hot List, and you have scheduled the Hot List for a Recurring or a One-time import, a Scheduled Task for the import will also be created. See the EOC Administrator's Guide for more information about Scheduled Tasks.

5.2.2 Viewing List Names

To view List Names, select **Lists > List Names** from the menu at the top of the page. As shown in Figure 75, you will see a display of the lists in the system you have permission to view.

List Names

Go here to upload a list.



Go Home

Figure 75 — Existing Lists

You can easily view in this display the following information about the lists you have access to:

- List Name Name of the list
- **Domain** The EOC domain the list belongs to
- **Type** The type of the list:
 - Hot List
 - White List
- Notes Any pertinent notes about the list
- Last Updated Last date and time the list was updated.

NOTE: This is the date of any change to the list name or any entry in the list, not just the last time the list was imported.

You may filter the contents of the display by clicking the icon in the column header. Doing so will display the dialog shown in Figure 76. This dialog works in the same way as the one described in *In-Column Filtering* on page 57. Please refer to that section for more information.



Figure 76 — List View Column Filter Dialog

To learn how a List is updated from a file, please How the Hot List Upload Works on page 95.

5.2.3 Editing a List

To edit a list, perform the following instructions:

(1) Select **Lists > List Names** from the menu at the top of the page. You will see a display of the lists in the system. (Lists you do not have permission to view are not visible.) See Figure 77.



Figure 77 — Existing Lists to Edit

(2) Press the **Edit** (Pencil Icon) button next to the list you want to edit, which opens up the **Edit List** screen (see Figure 78). The **Edit** button will be grayed out if you do not have permission to edit the list and you will not be able to click on it.

Edit List

Back to List

List		
List Name		
Documentation List		
Domain		
Documentation Domain	<u>*</u>	
Туре		
Hot List	•	
Notes		
Documentation List of		
plates		
	~	
Only hit on Reads from th	is	
Last Updated		
2/19/2014 11:10:58 AM -05:00		
Script File		

Figure 78 — Edit List Screen

(3) If the Hot List you are editing is scheduled for to be updated on a recurring basis, the additional information shown in Figure 79 is displayed.

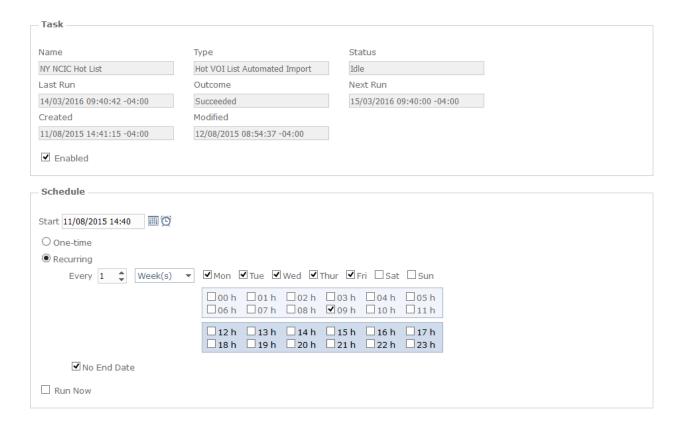


Figure 79 —List Update Schedule

- (4) Change whatever information about the list you want to change.
- (5) Press Save to save your changes.
- (6) If you make changes and then decide to discard them, just click the **Back to List** link below the **Save** button to return to the **List Names** screen.

5.2.4 Deleting a List

Referring to Figure 80, to delete a List:

(1) Select **Lists > List Names** from the menu at the top of the page. You will see a display of the existing lists in the system.

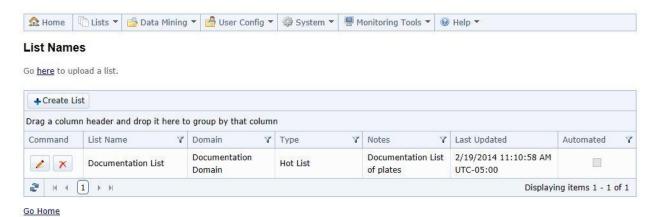


Figure 80 — Existing Lists

(2) Press the **Delete** (Red X) button next to the list you want to delete. You will be prompted to verify the deletion as shown in Figure 81. The **Delete** button will be grayed out if you do not have permission to delete the list and you will not be able to click it

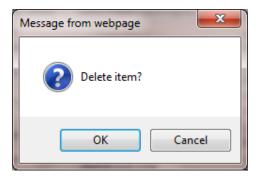


Figure 81 — Delete List Confirmation

(3) Press **OK** to delete the list. The delete operation deletes both the EOC List structure that you created and any data in that list.

5.3 Managing List Plates

Go Home

Use the **List Plates** selection from the menu to search, add, view, edit, and delete individual plates from a list.

5.3.1 Searching for a Plate in a List

To search for a plate in a list perform the following steps:

(1) First select **Lists > List Plates** from the menu at the top of the page and the screen in Figure 82 will appear. You will see a list of all the plates in the system that you have permission to view.

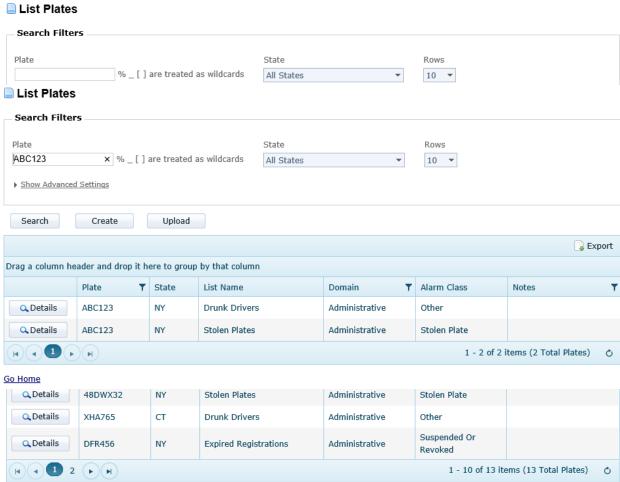


Figure 82 — Search List Plates Screen

(2) Referring to Figure 82, type in the **Plate Number** you are searching for and, optionally, select the **State** from the drop down and press **Search**. In the sample result shown in Figure 83, the same plate was found in two lists.

Figure 83 — List Plates Search Screen Results

Notes:

■ If you know that the plate is associated with a certain **Alarm Class**, press **Show Advanced Settings** and deselect all the Alarm Classes except the one you know is associated with the plate. This will speed the search.

- You can also use **Show Advanced Settings** to limit the search to certain lists and to show expired list entries, which are not displayed in search results by default. See Figure 86 on page 90.
- To search for an ambiguous plate such as A[B8]C123, you must enclose the opening square bracket inside square brackets. A search on A[[]B8]C123 will find the ambiguous plate A[B8]C123.
- Wildcards can be used to find all ambiguous plates, in the entire EOC or filtered by List or Alarm Class as described above. A search on %[[]% will find all ambiguous plates.

5.3.2 Add a Plate to a List

To add a plate to a List perform the following steps:

- (1) Select Lists > List Plates from the menu at the top of the page.
- (2) Referring to Figure 83, press the **Create** button to add a plate. You will see the screen shown in Figure 84.

List Plate Details

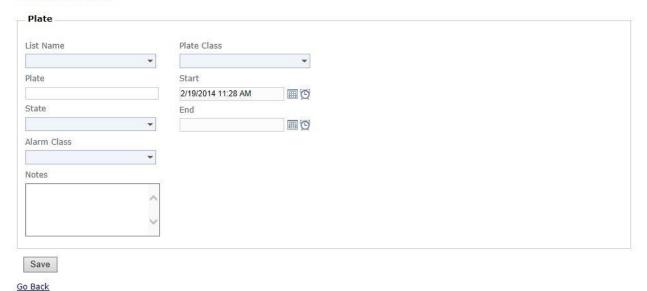


Figure 84 — Create List Plate Details Screen

- (3) Enter the following information:
 - List Name Select a list name from the drop down
 - Plate Type in the plate number

- State Select a state from the drop down
- Alarm Class Select an alarm class from the drop down
- Notes Type in any notes about the list that are pertinent
- Plate Class (not required), and
- Start and End Date and Time the interval for which the list entry is valid. Start Time is defaulted to the entry time. End Time is not required, is left blank by default, and can be entered later.
- (4) Press **Save** to create the List plate entry.
- (5) If you decide not to save the data you have entered, you can click on the **Go Back** link below the **Save** button to return to the **Lists > List Plates** screen.

Notes:

■ A list can include ambiguous plates, for situations where the full plate is not known. To enter an ambiguous plate, include a list of possible characters in square brackets in the plate number. For example, if a list contains A[B8]C123, an alarm will occur if either ABC123 or A8C123 is read.

5.3.3 View or Edit a Plate in a List

You may need to change information about a plate in a list, to either update information, add notes or otherwise correct the information.

Before you can view, edit or delete a plate from a list, you must search for it. The search process is identical to that outlined in other sections. To view or edit a plate in a list perform the steps that follow:

(1) First select **Lists > List Plates** from the menu at the top of the page and the screen in Figure 85 will appear. You will see a record of all the plates in the system that you have permission to view.

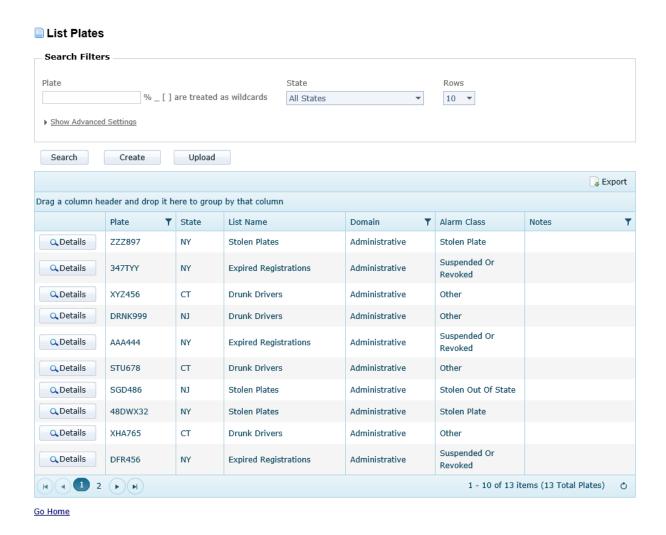


Figure 85 — List Plates Search Screen

(2) Referring to Figure 86, type in the **Plate Number** you want to view or edit and select the **State** from the drop down menu.

NOTES:

Operails

48DWX32

NY

Stolen Plates

- If you know that the plate is associated with a certain Alarm Class, press Show Advanced Settings and deselect all Alarm Classes except the one you know is associated with the plate. This will speed the search. You can also filter the search to specific Hot Lists
- 2. To search for an ambiguous plate such as A[B8]C123, you must enclose the opening square bracket inside square brackets. A search on A[[]B8]C123 will find the ambiguous plate A[B8]C123.
- 3. Wildcards can be used to find all ambiguous plates, in the entire EOC or filtered by **List** or **Alarm Class** as described above. A search on %[[]% will find all ambiguous plates.
- 4. By default, expired plate entries are excluded from the search results (an expired plate entry is one that has an end date that is in the past). To include expired entries in the

List Plates Search Filters Plate State Rows ABC123 % _ [] are treated as wildcards All States 10 ▼ Hide Advanced Settings ■ All Lists (3) ✓ All Alarm Classes (17) ✓ Show Expired Entries ▶ ✓ Administrative ✓ Amber/Silver Alert ✓ Immigration Violator ✓ Missing Person ✓ Other ✓ Protection Order ✓ Scofflaw ✓ Sexual Offender Upload Search Create Export Drag a column header and drop it here to group by that column Plate ▼ State List Name Domain ▼ Alarm Class Notes Q Details ZZZ897 Stolen Plates Administrative Stolen Plate Suspended Or **Expired Registrations** Q Details 347TYY NY Administrative Revoked XYZ456 СТ Drunk Drivers Administrative Other Q Details Details DRNK999 Drunk Drivers NJ Administrative Other Suspended Or Q Details AAA444 NY **Expired Registrations** Administrative Revoked Q Details STU678 CT Drunk Drivers Administrative Other Stolen Plates Administrative Stolen Out Of State Q Details SGD486 NJ

Administrative

Stolen Plate

search results, press **Show Advanced Settings** and click **Show Expired Entries**. Any expired plates will be displayed in the search results in red text.

Figure 86 — List Plates Search Screen (Parameters Added)

(3) Press **Search** and a screen similar to the one shown in Figure 87 will appear.

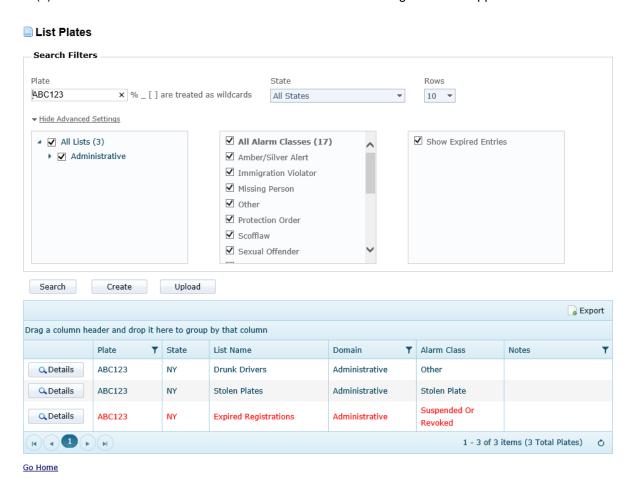


Figure 87 — List Plates Search Results

(4) Press the **Details** button next to the plate you are interested in and a screen similar to the one shown in Figure 88 will appear.

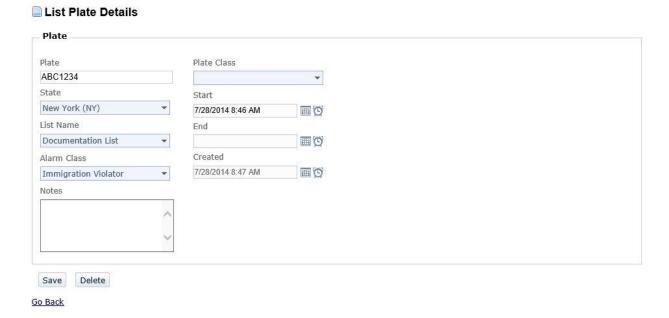


Figure 88 — List Plates Details

- (5) Edit whatever details you need to edit.
- (6) Press Save to save your changes.
- (7) If you wish to discard your edits, click the **Go Back** link.

NOTE: If the **Save** button or any information in any field is grayed out, you do not have permission to edit the list the plate belongs to and you will be unable to edit this plate.

5.3.4 Delete a Plate from a List

You may need to delete a plate that is in a list.

NOTE: You should not delete a plate from a List that is automatically imported from an external source on a scheduled basis, as the plate may be restored to the list when the next scheduled update runs.

Before you can delete an individual plate, you must search for it. The search process is identical to that outlined earlier in this section so refer to those figures if clarification is needed.

- (1) First, select **Lists > List Plates** from the menu at the top of the page.
- (2) Type in the **Plate Number** you want to delete and select the **State** from the drop down.

NOTE: If you know that the plate is associated with a certain **Alarm Class**, press **Show Advanced Settings** and deselect all Alarm Classes except the one you know is associated with the plate. This will speed the search. You can also filter the search to specific lists and/or search expired lists for the plate as well.

- (3) Press Search.
- (4) Review the results and then press the **Details** button next to the plate of interest.
- (5) Press **Delete** to delete the plate.

NOTE: If the Delete button is grayed out, you do not have permissions to delete a List plate.

5.3.5 List Export

You can export the search results to a text file. The data is written to the file in Elsag Legacy Format, which is described in the *EOC Administrator's Guide*. To perform an export:

- (1) Click Lists > List Plates.
- (2) Enter the conditions necessary to list only the plates that you wish to export.
- (3) Click Apply when all of the conditions have been specified.
- (4) Click on the **Export** button. The prompt shown in Figure 89 is displayed. As indicated in the prompt, the export will output no more than 1 million plates.

This action will export up to 1,000,000 fixed length records at a time. After the download, please check the end of the file for errors.

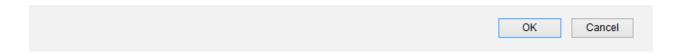


Figure 89 — Export List Confirmation Prompt

(5) Click Cancel to abort the export.

(6) Click **OK** to proceed with the export. The message shown in Figure 90 is displayed.

① Your export may take a moment to process. Please wait for the download dialog to appear.

Figure 90 — Wait For Download Prompt

(7) Once the export has been fully processed, your browser's download dialog will appear. If you are using Internet Explorer, the dialog will appear similar to that shown in Figure 91. If you are using a different browser, such as Firefox or Chrome, or a different version of Internet Explorer, the dialog will differ.



Figure 91 — Internet Explorer Download Dialog

(8) Click **Save** to save the file to the default location, or click the dropdown arrow next to **Save** to choose another location and/or file name.

5.3.6 Importing List Data into the EOC

5.3.6.1 List Data

List data can be imported into the EOC from external sources. A utility installed with the system uses the script information you associated with the EOC list structure above to parse the incoming data into a format suitable for the EOC's database. The utility can be configured to run automatically at a time of day when there is less pressure on the EOC system, so as to minimize any effects on response time.

NOTE: We recommend that the total number of list entries for all lists does not exceed 6 million records.

5.3.6.2 List Data from CarSystem

List data entered through CarSystem is automatically migrated to the EOC.

5.4 List Upload

You can upload a fresh copy of a list's data. To do this, perform the steps that follow:

(1) Select **Lists > List Upload** from the menu at the top of the page and the screen shown in Figure 92 will appear.



Figure 92 — List Upload Screen

(2) Select the List to update from the **List Name** drop-down and the parser that will interpret the data in the file to be uploaded. You will only see lists to which you have rights.

NOTE: Below the **Parser** drop down menu, you will see a sample of the selected parser's format.

(3) Select the parser that will interpret the data in the file to be uploaded from the **Parser** drop-down.

NOTE: Below the **Parser** drop down menu, you will see a sample of the selected parser's format.



Figure 93 — List Upload Screen (List and Parser Selected)

(4) Press the Select button and browse to the location of the file to be uploaded.

NOTE: The file must be smaller than 1000 MB.

(5) Press **Save**. You will see the screen shown below in Figure 94.

NOTE: The processing queue is shown in the System Tasks page. Your list will be processed within five minutes of upload completion.



Figure 94 — List Upload Screen (List Queued)

For information on how to schedule a List upload to occur on a scheduled basis, please see the *EOC Administrator's Guide*.

5.4.1 How the Hot List Upload Works

When a Hot List is uploaded, a System Task is scheduled to do the update. When that task runs, the data in the data file is first uploaded into a working area. The task then compares all properties of each plate entry in the uploaded list to all properties of the existing plate entries in the Hot List and either ignores the row, inserts a new row or marks an existing row as expired using these rules:

- An entry in the uploaded data that exactly matches an existing entry in the Hot List is ignored (since all properties match, there's no reason to do anything to the row).
- If there is an entry in the uploaded data that does not exactly match any existing row, a new entry is added to the Hot List.
- If an existing entry is not exactly matched by any row in the uploaded data, the existing row is marked as expired.

Expired entries are deleted from the database by the Database Maintenance System Task. One of the things the Data Maintenance task does is delete any Hot List entry that was marked expired at least 14 days before. As shipped, the Database Maintenance task runs every night at midnight.

To illustrate this process, consider the following example.

A Hot List exists in the database containing the VRM entries shown in Table C.

Table C — Existing Hot List Data

VRM	ALARM CLASS	END DATE	NOTES
A064ZNN	Stolen Vehicle	12/31/2016	TOYOTA VERSO TREND D-4D WHITE Stop NK B21 04LANCS/EA 01772 123456 1 Firearms RESTRICTED NODATA NODATA 1234/DS F SMITH
AK64UKV	Violent Gang	12/31/2017	AUDI A3 S LINE TFSI WHITE Access FI A52 04LANCS/WA 01772 123457 4 Weapons RESTRICTED NODATA NODATA 1234/DS F SMITH
BG64XNV	Wanted Person	12/31/2017	TOYOTA AURIS EXCEL VVT-I CVT BLUE stop VI B21 04LANCS/WA 01772 123457 4 Weapons RESTRICTED NODATA NODATA 1234/DS F SMITH

A new file is uploaded containing the information shown in Table D.

Table D — Uploaded Hot List Data

VRM	ALARM CLASS	END DATE	NOTES
AO64ZNN	Stolen Vehicle	12/31/2016	TOYOTA VERSO TREND D-4D WHITE Stop NK B21 04LANCS/EA 01772 123456 1 Firearms RESTRICTED NODATA NODATA 1234/DS F SMITH
AK64UKV	Violent Gang	12/31/2017	AUDI A3 S LINE TFSI WHITE Access FI A52 04LANCS/WA 01772 123457 2 Explosives RESTRICTED NODATA NODATA 1234/DS F SMITH
7424MP	Stolen Plate		JAGUAR XF PREMIUM LUXURY D V6 A BLUE No Alert WE C23 04LANCS/EA 01772 123456 3 Fails to stop for Police RESTRICTED NODATA NODATA 1234/DS F SMITH

When the upload task runs, it takes the following actions:

- (1) The entry for AO64ZNN is left unchanged as the data in the uploaded Hot List data exactly matches the existing data for the plate.
- (2) The existing entry for AK64UKV is marked as expired as of the task start time and a new entry for that plate is added using the input data. This is because there is no entry in the input file that exactly matches it (if you look closely, you'll see that the Notes field is different in the input file record).
- (3) The existing entry for BG64XNV does not have a match in the uploaded data file, so it is marked as expired as of the task start time.
- (4) The entry for 7424MP in the uploaded data file is added to the database as there is no matching entry for it in the existing data.

Since an expired entry remains in the database for 14 days after it is marked expired, the total number of plate entries in the Hot List will be greater than the number shown in a default search for that Hot List. To have the expired entries included in the search results, you have to check-off the **Show Expired Entries** Advanced Search Option.

5.4.2 Built-In Hot List Parsers

As shipped, the EOC contains parsers for a number of common file formats. Table E below lists the built-in parsers that are included in the EOC.

Table	F —	Ruilt-in	Hot I	ist	Parsers

Format	Sample	Comments
Elsag Legacy Format	ABC123 NY#5Hot plate comments	Imports data using a fixed length record format, described in detail in the EOC Administrator's Guide.
Comma Separated Values (CSV)	ABC123,NY,Hot plate comments	Imports data that uses a comma separated format, with all entries assigned the same alarm class. One parser exists for each unique alarm class.

5.4.3 Supported Sources of Hot List Data

When you schedule a Hot List to be updated on a scheduled basis, you specify a script for the EOC to use. The script specifies what parser to use and where to find the file with the data to be uploaded for the Hot List.

The EOC supports the following sources for Hot List data:

- One or more files copied to a folder or folders on the hard drive(s) of the computer running the EOC.
- One or more web sites.

The data may be saved in an uncompressed file or it may be compressed using the ZIP or GZIP compression algorithms.

5.4.4 Custom Hot List Parsers

The EOC supports the use of custom Hot List parsers to parse a file whose format differs from the built-in parsers. Such a parser can be uploaded into the TRAN database and used to upload data into a Hot List. A custom Hot List parser can be created to parse any data file format.

Please see the EOC *Administrator's Guide* for more information about custom Hot List parsers. Custom Hot List parsers are created by Selex ES personnel to meet customer requirements. If you require a parser for a format not covered by one of the built-in parsers, please contact Selex ES Technical Support.

For information about scheduling a Hot List for automatic updating, please see Creating a List on page 76. For information on changing the time when a Hot List is scheduled to be updated, please see the System Tasks section in the EOC *Administrator's Guide*.



6 Monitoring – Alarm Management

6.1 Dispatcher User Interface

The EOC Dispatcher allows users to view real-time alarms from camera sites with the ability to mark each alarm record Correct or Incorrect, edit the alarm and add Officer Notes to the alarm.

The Dispatcher feature allows EOC users to monitor and acknowledge alarms from remote cameras connected to SELEX ES's CarSystem which have not been confirmed in the field as correct or incorrect. This is particularly helpful for alarms from fixed, unmanned cameras.

Figure 95 Illustrates the Dispatcher components.

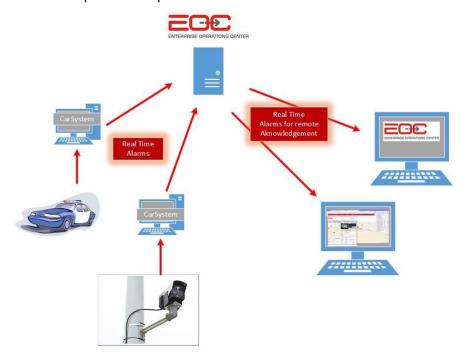


Figure 95 — Dispatcher Component Block Diagram

An alarm originates wherever the CarSystem software and LPRs are installed, either from a car or an FCU fixed camera. Alarms displayed on each Dispatcher client are determined by the user's domain permissions and Dispatcher filter settings.

To open Dispatcher select **Monitoring Tools > Dispatcher** from the menu bar.

As shown in Figure 96, a list of all recent alarms will be displayed.

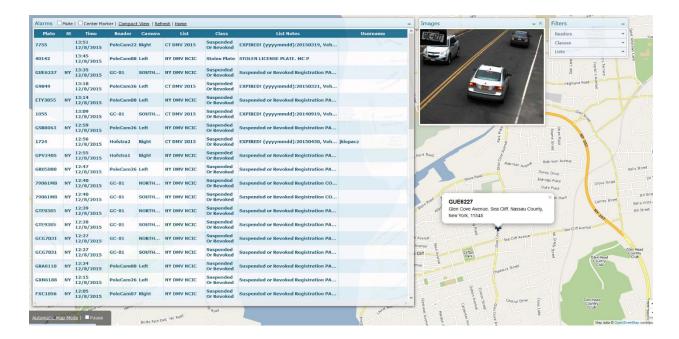


Figure 96 — Dispatcher Main Screen

The Dispatcher display is composed of the following parts:

- A map in the background that shows one marker for each alarm currently listed.
- The Alarms List, in the upper left corner, which lists up to 50 alarms that are pending review and up to an additional 50 that have been reviewed and marked correct or incorrect.
- The **Images Viewer**, in the upper middle of the page, which shows the images associated with the currently selected alarm.
- The **Filters** box, in the upper right corner, which allows you to select the readers, alarm classes, and/or Lists for which alarms will be displayed.
- The Map Mode Selector, in the lower left corner.

NOTE: The Alarms List, Images Viewer, and Filters box are all free floating windows which you can drag anywhere within the Dispatcher display. Just click on the title bar and drag to move the window. You can also minimize any of the windows by clicking the — icon in the upper right corner. You can close the Images Viewer by clicking on the X in its upper right corner. Lastly, you can change the Alarms List window's height and/or width as desired by dragging any of its edges.

The Alarms List contains a menu at the top with the following options:

- Mute: Prevents Dispatcher from playing audible alarm notification messages when an alarm is received.
- Center Marker: When checked, automatically centers the map on the location of the last alarm with coordinates that was received.

■ Compact View: Adjusts the size & position of the Alarms List, Images Viewer, and Filters box for smaller displays. Figure 97 shows the Dispatcher page in Compact View. Note this also checks-off the Center Marker choice.

- Refresh: Reloads and restores the Dispatcher page to its default layout and settings.
- Home: Navigates back to the EOC's Home page (where you can perform a Fast Search).

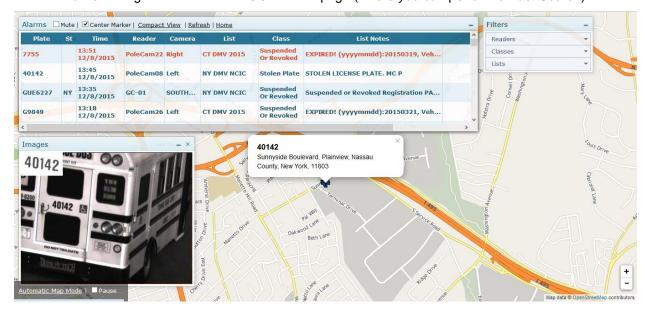


Figure 97 — Dispatcher Compact View

The color of the text displayed in each row changes according to the following rules:

- When an alarm has just been received, and if its status is Pending Review, its text is displayed in red letters for two (2) minutes.
- After two minutes, or if the alarm's status is changed, the alarm's text will display in blue letters.

NOTE: The length of time that an alarm that is pending review will be displayed in red letters is controlled by the Dispatcher Active Alarm Duration application setting. See the *EOC Administrator's Guide* for more information about the setting.

6.1.1 Dispatcher Map Modes

Dispatcher operates in one of two different Map Modes:

- Automatic Map Mode, in which the most recently received alarm is automatically selected.
- Manual Map Mode, in which the user manually selects alarms to view their details.

Dispatcher starts in Automatic Map Mode when it is first displayed. If you move the map, change the map's zoom level, or select an alarm in the Alarms List to view its details, Dispatcher switches into Manual Map Mode. While in Manual Map Mode, the timer restarts every time you select an alarm or move the map.

While in Manual Map Mode, you can switch to Automatic Map Mode by clicking on the **Automatic Map Mode** link in the Map Mode Selector at the bottom left corner or do nothing else on the Dispatcher page for 2 minutes.

MPH-900-OCUM

To keep Dispatcher from automatically switching back to Automatic Map Mode, check-off the **Pause** checkbox in the Map Mode Selector. This will keep the most recently received alarm from being selected and the map from automatically moving to show that alarm.

When Dispatcher is in Automatic Map mode, the Map Mode Selector is hidden. To display it and switch back to Manual Map Mode, just select an alarm.

NOTE: The length of time that Dispatcher waits before automatically changing from Manual Map Mode back to Automatic Map Mode is controlled by the Dispatcher Manual Mode Timeout application setting. See the *EOC Administrator's Guide* for more information about the setting.

6.1.2 Alarm Handling and Filtering

When an alarm is received, an audible sound will be heard. This can be turned on and off using the **MUTE** checkbox at the top of the Alarms List window.

Selecting a specific alarm will pop up the Alarm Details window, which shows the vehicle and plate image, and highlights that alarm's location on the map. You can also maximize the size of both vehicle and plate image within the Alarm Details window by clicking on them individually.

Notes:

Referring to Figure 98, the user can select a specific reader or multiple readers whose alarms will be displayed by using the **Readers Tab** in the Filters box. Doing so will restrict the alarms displayed to those that were generated by the readers selected.

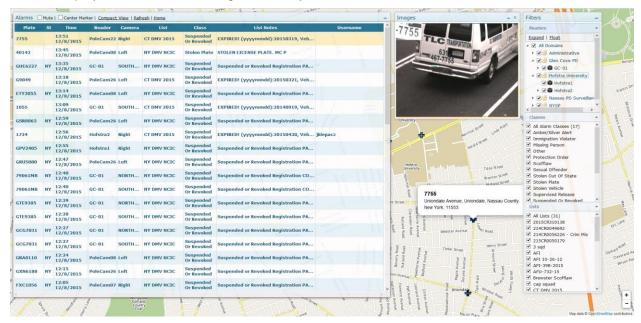


Figure 98 — Alarm Location and Parameters

Referring again to Figure 98, the user can select to display only alarms of a specific alarm class
or multiple alarm classes by using the Alarm Classes Tab in the Filters box. Doing so restricts
the alarms displayed to those that are of the alarm classes that are selected

■ The user can limit the alarms displayed to those generated from a specific list source or multiple lists by using the **Lists Tab** in the Filters box (see Figure 98). Again, doing so restricts the alarms displayed to those that were generated by entries on the selected Lists.

These criteria can be combined in any way desired. The default is all alarms for all readers, of all alarm classes, from all lists.

NOTE: Dispatcher will always show up to the 50 most recent pending alarms and the 50 most recent not-pending alarms (i.e., those marked correct or incorrect) that match the criteria chosen.

6.1.3 Alarm Details

Referring to Figure 98, when an alarm is displayed the user can click on its row in the Alarm List, causing a pop up window with that alarm's details to be displayed.

Referring to Figure 99, the detail of the alarm, including the images, are shown in the Alarm Details window.

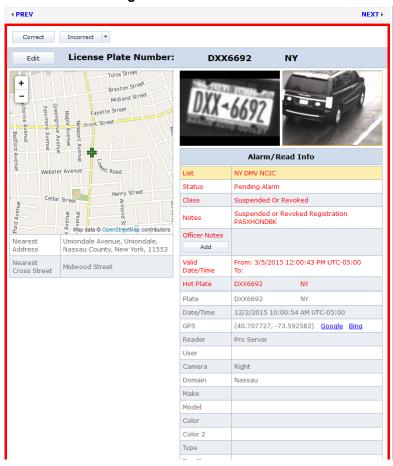


Figure 99 — Alarm Details

6.1.4 Alarm User Actions

In the Alarm Details window, users have the ability to edit the plate and/or state, mark the alarm correct or incorrect, and add Officer Notes.

6.1.4.1 Edit Plate and State

If the plate and/or state was misread by the LPR, you can edit the plate read by:

- (1) Clicking Edit. The Alarm Details window will appear as shown in Figure 100.
- (2) Change the Plate and/or State fields as required.
- (3) Click Save.

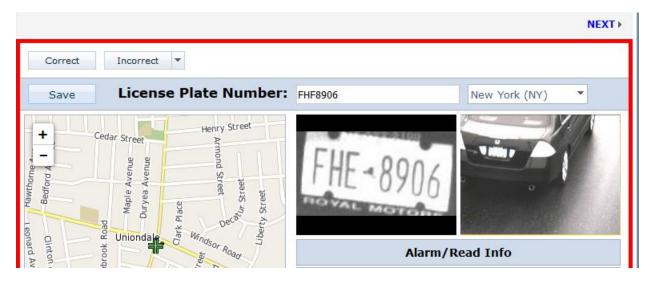


Figure 100 — Alarm Edit Plate and State Option

NOTE: When you edit the plate and/or state and click the **Save** button, you are actually creating a copy of the read that created the alarm with all information copied from the original read to the new one and the new plate and/or state that you entered. The new read also contains a reference to the original one.

6.1.4.2 Handling Alarms

When an alarm is generated, its status is initially set to **Pending Review**. This means that a human being must review the alarm to verify that the data it contains is correct or not. If the LPR read the plate and state correctly, it should be marked **Correct** (or **Accepted**).

To mark an alarm as Correct (or Accepted): click the **Correct** button at the top of the Alarm Details window. The alarm's status will change to "Accepted Alarm", as shown in Figure 101 below.

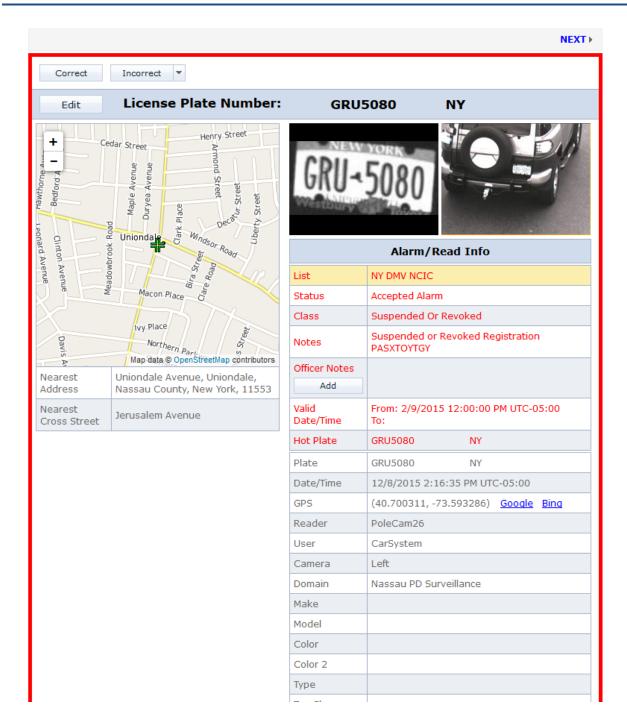


Figure 101 — Accepted Alarm

If the LPR did not read the plate and/or state correctly, it should be marked **Incorrect** (or **Rejected**). There are two (2) ways to do so:

Click the Incorrect button.

 Select a reason from the dropdown list that appears when you click on the downward pointing arrow on the right side of the **Incorrect** button (see Figure 102 below).

There are five (5) different reasons why the alarm is incorrect that can be selected from the drop down box. They are:

- Misread: the LPR did not read the license plate correctly.
- No Plate: the characters the LPR read were not from a license plate, but from other signage on the vehicle.
- Incorrect or Missing List Entry: The LPR read the plate correctly, but the List Entry that matched the plate had expired prior to the date of the read and was not updated in the database. For example, consider a vehicle with an expired registration, whose owner had renewed the registration earlier on the day the alarm was generated.
- Wrong State: The LPR read the plate correctly, but the wanted vehicle is registered in a different state.
- Other: The read was wrong for some reason other than those above.

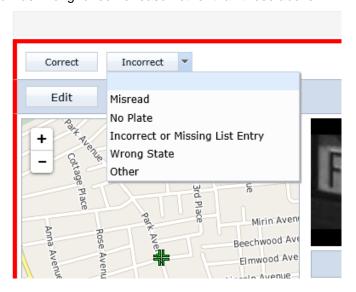


Figure 102 — Alarm Event Incorrect Options

Selecting an option from the dropdown marks the alarm Incorrect and sets the reason to the value chosen, while clicking the **Incorrect** button marks it Incorrect and sets the reason to **Misread**. After the status is changed, the alarm is updated in the database and an audit message is recorded. The Alarm Details window will change and appear as shown in Figure 103 below. Note that the reason you chose from the dropdown appears in parentheses next to the text "Rejected Alarm".

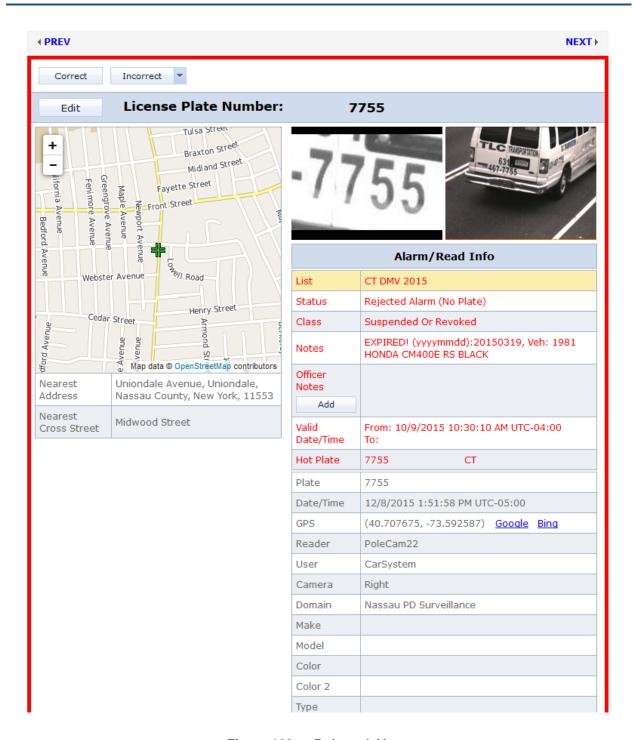


Figure 103 — Rejected Alarm

After marking an alarm correct or incorrect, you cannot reset the status back to Pending Review, though you can change its status to either Accepted or Rejected or perform other edits.

6.1.4.3 Adding Officer Notes

Officer Notes are notations added to an alarm by an officer about the vehicle and/or driver and are intended to be shared with any other officer who might encounter the vehicle in the future.

For example, an officer driving a car equipped with LPRs and CarSystem encounters a vehicle whose plate is on a list for a suspended or revoked registration. An alarm is generated and displayed to the officer. The officer pursues the vehicle and pulls it over. While processing the vehicle, he discovers that the driver has documentation proving the registration was renewed recently, but the entry has not yet been removed from the list. In this case, the officer chooses to add an Officer Note indicating that the driver has indeed renewed the registration and the vehicle should not be pulled over if encountered by other officers in the future.

To add officer notes to an alarm, click the **Add** button in the Officer Notes area and the screen shown in Figure 104 will appear. The area at the top of the dialog will display any previously entered Officer Notes. Enter your new notes into the area at the bottom, then click **Save**. Refer to Figure 105 to see what the alarm details look like after saving officer notes.

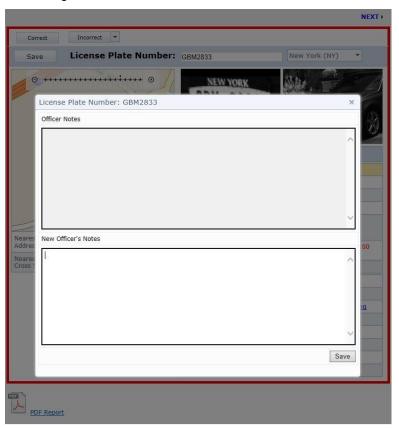


Figure 104 — Add Officer Notes Screen

To cancel the operation, just click the X in the upper right corner.

Notes:

■ Any user of the system with permissions to view the list that contained the entry which generated the alarm will see these officer notes once they are saved.

 Once you have clicked the Save button, you cannot ever change the officer notes. That is, new officer notes can be added, but old ones cannot be edited or deleted.

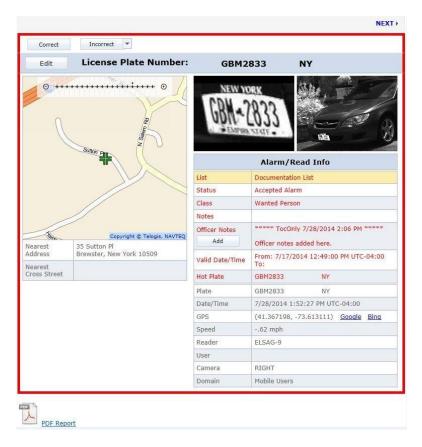


Figure 105 — Alarm Details after Officer Notes Added

6.1.4.4 Exporting Alarm Details as PDF

At the bottom of the Alarm Details window (visible at the bottom of Figure 105 above), there is a **PDF Report** icon. Clicking on this icon allows you to export the Alarm Details information as a PDF file, complete with the images. You can click the PDF icon to open the file and save it to a location outside the EOC.



7 Monitoring and Diagnostics

7.1 Dashboard

Dashboard is a utility for system administrators and technicians that need to observe current performance details of the EOC system. Referring to Figure 106, select **Monitoring Tools > Dashboard** on the menu bar.



Figure 106 — Dashboard Reads Display

The Dashboard Tabs are described below:

Totals: Shows graph and statistics for:

- Total Read count since EOC started
- Total Reads during the last minute, and
- Read Count totals for the last two days.

Reads: Shows graph and statistics by Reader for the Read counts in the last 24 hours (a Reader is either a FCU or a Car). Referring to Figure 106, the information shown per Reader is:

- Reader Name,
- Number of Reads
- Reader Type,
- Last Read Time,
- EOC Read and Image Insert times, and
- Domain.

The data display is sorted by Domain and by Last EOC Insert Time. That is, the time the last read was inserted into the TRAN database.

Alarms: Shows graph and statistics by Reader for the Alarm counts in the last 24 hours. This excludes Suspended or Revoked Registration alarms. The information shown per Reader is:

- Reader Name,
- Number of Alarms
- Reader Type,
- Last Alarm Time, and
- Domain.

The data display is sorted by Domain and by Last Alarm Insert Time.

Failed: Readers that failed to report in the last hour. That is, if all of the cameras in an FCU or on a Car are not reading, it is considered as failed for this report. The information shown per Reader is:

- Reader Name, and
- Domain.

The data displayed is sorted by Domain and Reader name.

List Status: All Lists and their success/failure status if they have an automated import task. The information shown per Hot List is:

- List Name,
- Status: indicates whether the task is currently running or not. Possible values are Idle, Executing, and blank (which means the task has never run),
- Last Update Time,
- Last Run Time,
- Outcome: indicates the result of the last run. Possible values are Unknown, Succeeded, Failed, and Cancelled,
 - Next Run Time, and
 - Domain.

The data displayed is sorted by Domain.

GPS Status: Graph and statistics by Reader for bad GPS coordinates (zeros) sorted by Domain by percentage of bad GPS coordinates for the last two weeks. Clicking on Bad GPS or Good GPS in this

Reads Per Reader

part of the screen: Bad GPS Good GPS toggles the visibility of those results in the graph. The information displayed by Reader is:

- Reader Name,
- Number of Reads
- Number of Reads with bad GPS coordinates.
- Percentage of Reads with bad GPS coordinates,
- Reader Type, and

Domain.

The data displayed is sorted by Domain and Reader name.

Time Difference: Shows Car and FCU system time differences compared to the EOC server time. The information displayed by Reader is:

- Reader Name,
- Difference between Reader's time and the EOC's time.
- Reader Type, and
- Domain.

The data displayed is sorted by Domain and Reader name.

Statistics Report: Shows reader statistics grouped by reader for the last 8 days (default). The statistics shown are:

- Number of reads,
- Number of accepted alarms;
- Number of rejected or incorrect alarms, and
- Domain.

Results can be exported in CSV format.

Statistics Builder: Read Rate, Image Insert Rate and Alarm Rate can be compared for back log detection by any or all readers for the same or different time periods. Use examples are graphical comparison of Read data to Image data flow into EOC or weekly comparison of Read Rates.

Helpful shortcut buttons allow quick display of All Readers Read Rate for Today, This Week or Last Week. Results can be exported in CSV format.

NOTE: The Statistics Builder replaced Reader Analysis.



The Dashboard Full Report icon will export a formatted PDF report for the Totals, Reads, Alarms, Failed, List Status, GPS Status and Time Difference results tabs. The Statistics Report and Statistics Builder tabs have their own CSV exports.

7.2 Statistics Report

Statistic Report:

 Displays statistics per car/reader for date, number of reads, number of accepted or rejected alarms and domain.

- Creates data sets of statistics using filters for reader, date, number of reads, number of accepted or rejected alarms and domain.
- Exports data sets of statistics to comma-separated value (CSV) files.

You can use the EOC to inspect the statistics for reads and alarms collected by the Readers that are feeding data to the EOC. (A Reader is the EOC's term for the source of all cameras associated with a particular car or FCU.)

You can use the filtering mechanisms in the columns that have them to view the data in many different ways.

7.2.1 Exporting Statistics Report

You can also export statistical reports from the application to a Comma-Separated Value (CSV) file.

To do this, first create the data set that you want to export, as shown above. Once you've done that, follow this procedure:

(1) Press the icon and (referring to Figure 107) you will see this dialog screen:

(1) Your export may take a moment to process. Please wait for the download dialog to appear. Hide this message.

Figure 107 — Export Dialog

(2) Referring to Figure 108, the system will download the data, and then Windows will prompt you to open or save the CSV file. By default, the file will be saved in your Windows **Downloads** folder:



Figure 108 — Open or Save Dialog

NOTE: Figure 108 shows the save prompt generated by Internet Explorer. If you use another browser, like Firefox or Chrome, a different prompt will be displayed.

(3) If you open the CSV file using Excel, it will look like Figure 109.

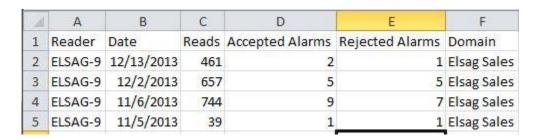


Figure 109 — Exported Statistics Report CSV File Displayed

7.3 Statistics Builder

Statistic Builder (as shown in Figure 110):

- Displays Read Rate, Image Insert Rate and Alarm Rate statistics for all Readers, one Reader or multiple Readers using variable Start Dates
- Read Rate, Image Insert Rate and Alarm Rate can be compared for back log analysis by all or any reader for the same or different time periods.

Use examples are:

- Graphical comparison of Read data to Image data flow into EOC
- Weekly comparison of Read Rates;
- Comparing Read Rate to Image Insert Rate to review image back logs (delayed image transmission to the EOC).

Helpful shortcut buttons allow quick display of All Readers Read Rate for Today, This Week or Last Week. Results can be exported in CSV format.

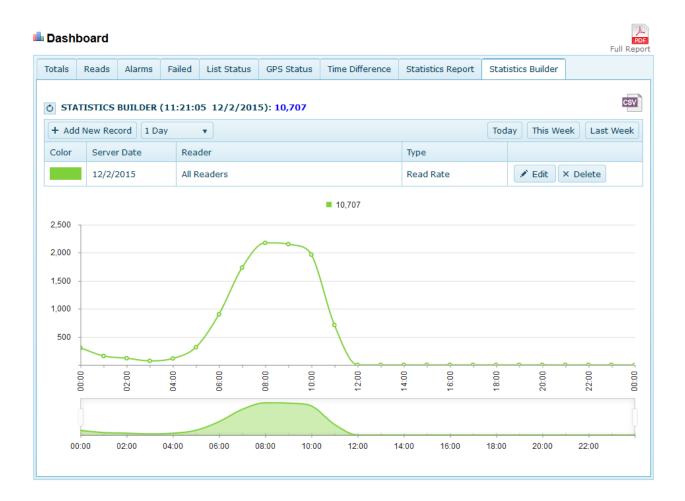


Figure 110 — Statistics Builder

You can add entries to the report for individual Cars, individual FCUs, all Cars combined, all FCUs combined, or individual Remote Servers. This allows you to see how much of the data entering the system is coming from any of these sources. To add a new entry to the report:

(1) Click + Add New Record. A new row is added to the grid, as shown in Figure 111.



Figure 111 — New Record Added

(2) Click on the drop down to choose either All FCUs, All Cars, or a specific Car, FCU or Remote Server.

(3) Click **Update** and the graph will be regenerated with your changes, as shown in Figure 112. In this case, a specific FCU was added to the report.

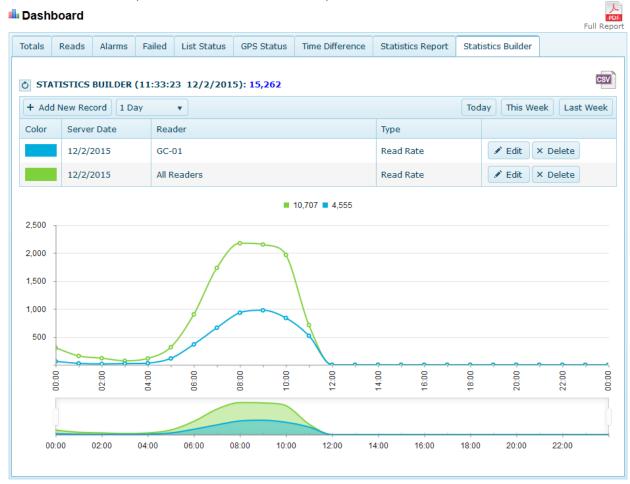


Figure 112 — Modified Statistics Builder

The Statistics Builder feature replaced Reader Analysis

7.3.1 Exporting Statistics Builder

You can also export the Statistics Builder results from the application to a Comma-Separated Value (CSV) file. To do this:

(1) First create the data set that you want to export, as shown above

(2) Click the icon to export the data shown in the Statistics Builder to a CSV file for further analysis in a spreadsheet program like Excel. Doing so causes the prompt shown in Figure 113 to be displayed. By default, the file will be saved to your personal Downloads folder.



Figure 113 — Save Statistics Builder CSV File Prompt

NOTE: The prompt displayed is the one generated by Internet Explorer 11. The prompt will differ if you use a different browser, like Firefox, Chrome or Edge.

(3) If you open the CSV file using Excel, it will look like Figure 114.

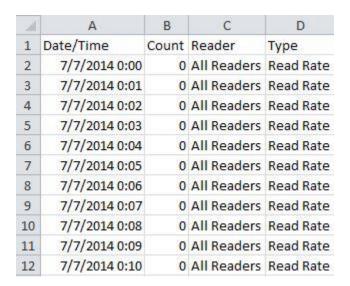


Figure 114 — Exported Statistics Builder CSV File Displayed

Statistics Builder's results are per minute, as compared to the Statistics Report results which are per day.

7.4 Log Messages

The Log Messages selection allows you to view a historical list of all system messages. The messages include internal messages generated within each CarSystem that reports to the EOC, as well as messages generated internally by the EOC. A user must have System Admin | View privilege in the domain a CarSystem belongs to in order to see its log messages. To see the EOC's log messages, a user must have System Admin | View privilege in the Administrative domain.

To view the messages that your permissions entitle you to see, select **System > Log Messages**. You will see a display of the messages similar to those shown in Figure 115.

Log Messages

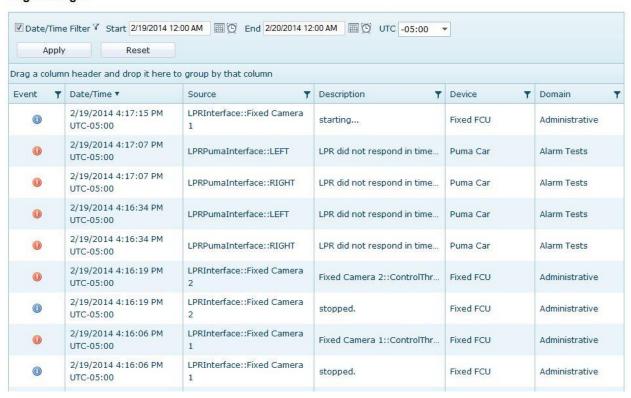


Figure 115 — Log Messages Sample

Referring to Figure 116, the user can filter the display in the same ways that you can any other display in EOC. The data can be filtered by the Event Type, time, date, time zone offset, Source, Description, Device and Domain columns. Event filtering is limited to the list of events as displayed in the Event Filter dropdown (see Figure 116).

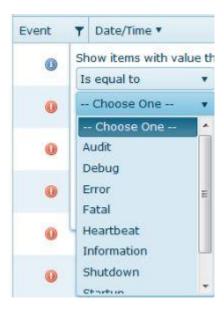


Figure 116 — Event Filtering Sample

7.5 Audit Messages

The **Audit Messages** selection allows you to view a historical list of all system activities and who performed them. See Figure 117.

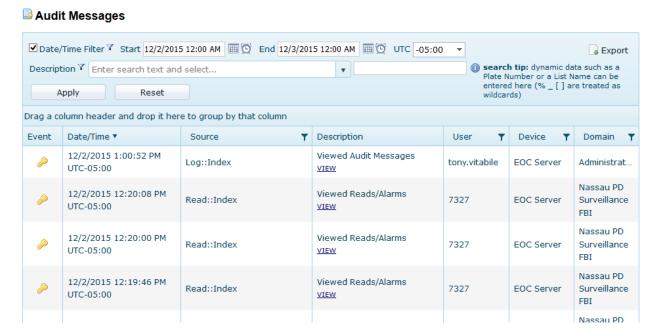


Figure 117 — Audit Messages Initial Screen

Figure 118 is an example of the details for one of these audit messages. The audit message in the example was generated in response to the **Reason for Action** prompt when the user performed a search for reads using the **Data Mining > Query Reads** command. The string "R4A" indicates that the message was generated in response to the **Reason for Action** prompt.



Figure 118 — Audit Message Details

Audit messages come from various EOC and CarSystem activities which are referred to as the Source.

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Table F is a list of EOC Sources: **Table G** is a list of CarSystem Sources.

Table F — EOC Sources

SOURCE **DESCRIPTION** ACCOUNT::LOGON User logs on to EOC ACCOUNT::LOGOFF User Logs off of EOC ACCOUNT::REGISTER Create a User Views User Manager page ACCOUNT::INDEX ACCOUNT::EDIT Edits a User ACCOUNT::DELETE Deletes a User ACCOUNT::CHANGEPASSWORD Changes a User password ACCOUNT::FORGOTPASSWORD Reset password page APPSETTINGS::INDEX Viewed System Application Settings page APPSETTINGS::SAVELISTPARSER Upload a List Parser APPSETTINGS::SAVELISTPARSER Delete a List Parser APPSETTINGS::DELETELISTPARSER Delete an uploaded List Parser APPSETTINGS::REMOTESERVERS_CREATE Create a Remote Server APPSETTINGS::REMOTESERVERS UPDATE Update a Remote Server APPSETTINGS::REMOTESERVERS_DESTROY Delete a Remote Server CONVOY::RESULTS View Convoy Search Results page CONVOY::CONVOYSUMMARY Viewed Convoy Summary for a plate DASHBOARD::INDEX View Dashboard **DISPATCH::ADDOFFICERNOTES** Add Officer Notes DISPATCH::CORRECT Mark a Dispatcher page record Correct DISPATCH::EDITPLATE Edit the plate from the Dispatcher alarm details page **DISPATCH::INDEX** Open Dispatcher page HOME::ABOUT View the Help About page View the List Names page LIST::INDEX LIST::EDIT Edit a List entry Create a List LIST::CREATE LIST::DELETE Delete a List LISTDETAIL::INDEX View the Lists Plates page LISTDETAIL::DETAILS View a List plate detail LISTDETAIL::UPLOAD Upload a List LISTDETAIL::CREATE Create a List Plate entry LOG::INDEX View System Log Messages page READ::INDEX View Query Reads page SEARCH::INDEX View Cross Search page SYSCONFIG::INDEX View System Device Manager page SYSCONFIG::EDIT Edit a Node in Device Manager

SOURCE	DESCRIPTION
SYSCONFIG::APPEND	Create a domain or Node in device Manager
SYSCONFIG::DELETE	Delete a Node in Device Manager
SYSCONFIG::MOVE	Move a Node within Device Manager
SYSCONFIG::EXPORT	Export a Node in Device Manager
SYSCONFIG::BATCHUPGRADE	Batch update a group of nodes in Device Manager
SYSCONFIG::BATCHEXPORT	Batch export a group of nodes in Device Manager
SYSTASK::INDEX	View System Tasks page
SYSTASK::DETAILS	View System Tasks details page
USERGROUP::INDEX	View User Groups page
USERGROUP::EDIT	Edit a User Group
USERGROUP::CREATE	Create a User Group
USERGROUP::DELETE	Delete a User Group
USERPROFILE::INDEX	View User Profile page

Table G — CarSystem Sources

SOURCE	DESCRIPTION
DataRetentionManager::AddPolicy	User adds a Data Retention Policy
DataRetentionManager::DeletePolicy	User deletes a Data Retention Policy
DataRetentionManager::Edit Policy	User Edits a Data Retention Policy
DataRetentionManager::Enable Data Retention	User Enabled or Disabled Data Retention (CarSystem 6.9 or earlier only)
DataRetentionManager::RunTimeSpinner	User changed the Data Retention Run Time
GpsStatus::EditGps	User edited the GPS configuration
Hot List Details::Add Hot List Entry	User added a plate to a List
Hot List Details::Alarm Class	User changed a List Entry's Alarm Class
Hot List Details::Begin Date	User changed a List Entry's Start Date
Hot List Details::End Date	User changed a List Entry's End Date
Hot List Details::Hot List	User changed the List a List Entry's belongs to
Hot List Details::Notes	User changed a List Entry's Notes
Hot List Details::Plate	User changed a List Entry's Plate
Hot List Details::State	User changed a List Entry's State
LPRConfiguration::AddCamera	User added a camera to the LPR Configuration
LPRConfiguration::AutoConfigureCameras	User change the Automatically Configure Cameras option
LPRConfiguration::DeleteCamera	User deleted a camera from the LPR Configuration
LPRConfiguration::EditCamera	User edited a camera's configuration
Record Details::Edit Plate	User edited a read's Plate
Record Details::Edit State	User edited a read's State
Record Details::LastRecordChanged	User viewed a read or alarm's details
Searcher::Search	User performed a search
SettingsEditor::AlarmsToDisplay	User changed the number of Recent Alarms to Display setting
SettingsEditor::AllowUserToExit	User changed the Allow User to Exit setting
SettingsEditor::LoginRequired	User changed the Login Required setting
SettingsEditor::PageSize	User changed the number of reads to retrieve per page setting
SettingsEditor::ReadsToDisplay	User changed the number of Recent Reads to Display setting
SettingsEditor::ResultsLimit	User changed the maximum number of reads to export setting
SettingsEditor::UseVirtualKeyboard	User changed the Use Virtual Keyboard setting

Figure 119 shows the description drop down for the list of what is recorded as Audits.

NOTE: Descriptions starting with **CSY:** are audit message originating from CarSystem. Descriptions starting with **EOC:** are audit message originating from the EOC.

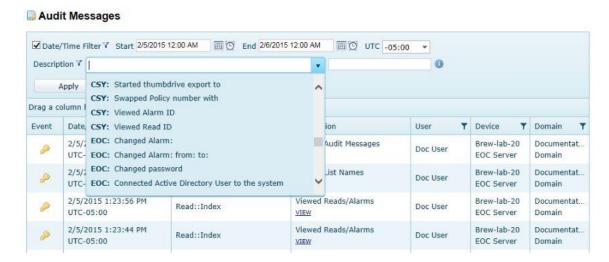


Figure 119 — Audit Messages Description Drop Down

Referring to Figure 120, the user can type a description in the Information Input Field to filter the list and then select an option.

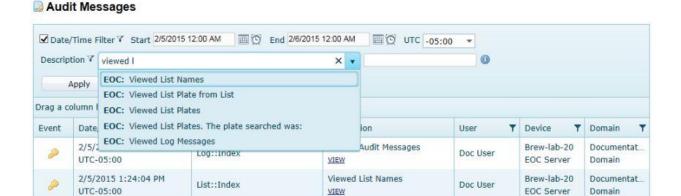


Figure 120 — Audit Messages Information Input Field

Referring to Figure 120, the "empty box" can be used to search for specific data items. Figure 121 shows an example of filtering the Description option to "plate" and a plate starting with DRB.

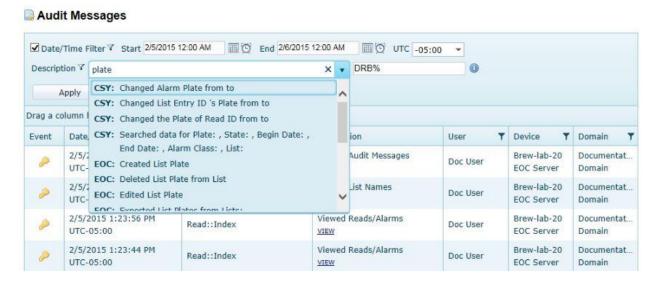


Figure 121 — Audit Messages Description Filtering

7.5.1.1 Exporting Audit Messages

You can export audit messages by clicking on the **Export** icon highlighted in Figure 122 below.

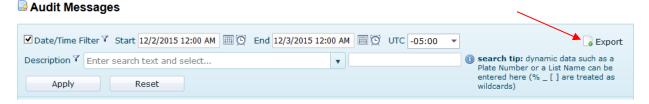


Figure 122 — Export Audit Messages Button

Clicking the Export button will cause the prompt shown in Figure 123 to be displayed.



Figure 123 — Audit Messages CSV Export Prompt

Click **Cancel** to abort the export. Click **OK** to perform the export. As the message in Figure 123 indicates, a maximum of 1,000,000 audit messages will be exported. The message shown in Figure 124 is displayed after you click **OK**..

① Your export may take a moment to process. Please wait for the download dialog to appear.

Figure 124 — Export Being Processed Message

Once the export has been generated, the message shown in Figure 125 is displayed. By default, the file will be saved to your Downloads folder.



Figure 125 — Save Audit Export Prompt

NOTE: The message shown is the one displayed by Internet Explorer 11. The message will look different if you are using a different browser, like Firefox, Google Chrome, or another version of Internet Explorer.

The exported data will look like that shown in Figure 126 if you open it in Excel.

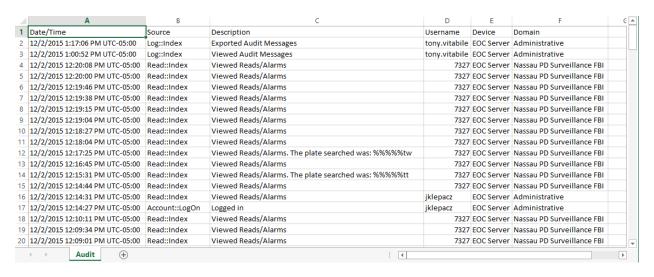


Figure 126 — Audit Message Export in Excel

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